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HISTORY
OF
CHRONIC PHLEGMASIÆ,
OR
INFLAMMATIONS,

FOUNDED ON
CLINICAL EXPERIENCE AND PATHOLOGICAL ANATOMY,
EXHIBITING A VIEW OF
THE DIFFERENT VARIETIES AND COMPLICATIONS OF THESE DISEASES,
WITH THEIR
VARIOUS METHODS OF TREATMENT.

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TRANSLATED FROM THE FRENCH OF THE FOURTH EDITION,

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CONTENTS OF VOL. II.

SECTION II.

PAGE.

Inflammations of the abdominal viscera in general	9
---	---

CHAPTER I.

Inflammation of the mucous membrane of the alimentary canal	12
I. Particular cases of gastritis	17
CASE I.—Acute gastritis, simulating catarrh and continued ataxic fever	<i>ib.</i>
II.—Acute gastritis with rheumatism, simulating inflammatory catarrh	23
III.—Acute gastritis simulating inflammatory catarrh	27
IV.—Acute gastritis simulating intermittent ataxic fever	31
V.—Acute and apyrexia gastritis	34
VI.—Gastritis less acute than the preceding, complicated with biliary cystitis	36
VII.—Acute gastritis, arachnoiditis, apoplexy	40
VIII.—Chronic gastritis with diarrhœa	44
IX.—Chronic gastritis with diarrhœa	46
II. Simple primitive enteritis	49
CASE X.—Chronic inflammation of the mucous membrane of the intestines, extending to the stomach	<i>ib.</i>
XI.—Chronic inflammation of the mucous membrane of the intestines, extending to that of the stomach, with cerebral irritation	51
XII.—Acute inflammation of the mucous membrane of the colon, become chronic from repeated errors in regimen	56
XIII.—Chronic inflammation of the mucous membrane of the intestines, with epistaxis and phlogosis of the parenchyma of the lungs	58
XIV.—Chronic dysentery, rendered febrile by accidental causes, and complicated with a pleuro-peripneumonic phlogosis	64
XV.—Chronic dysentery, which was febrile and violent at its commencement	68
XVI.—Violent dysentery become chronic, complicated with catarrh and tubercles of the lungs	71
XVII.—Chronic phlogosis of the mucous membrane of the colon, with slight catarrh	76
XVIII.—Chronic diarrhœa without fever, dropsy	79
III. Enteritis with continued fevers	88
CASE XIX.—Chronic diarrhœa following ataxic fever	<i>ib.</i>
IV. Of the complication of mucous phlogoses of the digestive passages with intermittent fevers	92

	PAGE.
CASE XX.—Quotidian fever with gastro-intestinal phlogosis and aneurism of the heart - - - - -	100
XXI.—Tertian intermittent fever with chronic gastritis - - -	103
XXII.—Intermittent fever changed into continued, with phlogosis of the thorax and abdomen - - - - -	106
XXIII.—Intermittent fever with phlogosis of the viscera of the thorax and abdomen - - - - -	114
XXIV.—Intermittent fever, followed by an inflammatory diathesis, terminated by a phlogistic disorganization of the abdominal viscera - - - - -	117
XXV.—Chronic diarrhœa, following intermittent fever - .	122
XXVI.—Quotidian fever with dysentery - . - - -	123
XXVII.—Chronic diarrhœa following intermittent fever - -	125

CHAPTER II.

General history of phlogoses of the mucous membrane of the digestive passages - - - - -	128
Etiology - - - - -	<i>ib.</i>
Causes of gastritis - - - - -	<i>ib.</i>
Predisposing causes - - - - -	<i>ib.</i>
<i>a.</i> Predisposing causes which act upon the whole system -	<i>ib.</i>
<i>b.</i> Predisposing causes which act directly upon the mucous membrane of the stomach - - - - -	135
Exciting causes - - - - -	137
Causes of enteritis - - - - -	138
Predisposing causes - - - - -	<i>ib.</i>
Exciting causes - - - - -	144
Development of the characteristic symptoms of phlegmasiæ of the mucous membrane of the digestive passages - - - - -	145
I. Gastritis - - - - -	146
Acute gastritis - - - - -	<i>ib.</i>
Chronic gastritis - - - - -	150
Enteritis or dysentery - - - - -	153
Acute enteritis - - - - -	154
Chronic enteritis - - - - -	155
Progress and different terminations of phlogoses of the mucous membrane of the digestive passages - - - - -	159
Mechanism of gastric phlogoses - - - - -	<i>ib.</i>
Duration, tendency, and termination of phlegmasiæ of the mucous membrane of the digestive tube - - - - -	162
Organic alterations - - - - -	167

CHAPTER III.

Treatment of phlogoses of the mucous membrane of the alimentary canal, in general - - - - -	174
Treatment of gastritis or phlogosis of the mucous membrane of the stomach - - - - -	178
Treatment of acute gastritis - - - - -	184

	PAGE.
CASE XXVIII.—Acute gastritis simulating continued ataxic fever	186
XXIX.—Acute gastritis tending to become chronic	191
XXX.—Sensibility of the stomach threatening phlogosis	193
XXXI.—Acute gastritis, simulating adynamic ataxic fever	197
XXXII.—Acute gastritis preceded by long irritation of the stomach	200
XXXIII.—Chronic gastritis	205
XXXIV.—Hæmatemesis, followed by chronic irritation of the stomach	207
Treatment of chronic gastritis	221
CASE XXXV.—Chronic gastritis	<i>ib.</i>
XXXVI.—Chronic gastritis	225
XXXVII.—Dysentery and gastritis following intermittent fever	228
Treatment of latent chronic gastritis	231
Treatment of phlogoses of the mucous membrane of the primæ viæ complicated with intermittent fevers	239
Of the treatment of enteritis, or phlogosis of the mucous membrane of the intestines	244
Treatment of chronic enteritis	251
CASE XXXVIII.—Chronic diarrhœa following ataxic fever	263
XXXIX.—Chronic diarrhœa following chronic catarrh	265
Summary of the history of phlegmasiæ of the mucous membrane of the organs of digestion	273
1st. Causes	<i>ib.</i>
2d. Development	274
3d. Progress and termination	275
4th. Organic alterations	<i>ib.</i>
5th. Curative method	276
6th. Complications	<i>ib.</i>

ADDITIONAL CHAPTER.

SECTION FIRST.—On inflammations of the liver, (January, 1822)	277
SECTION SECOND.—Phlegmasiæ of the kidneys and urinary bladder	288

CHAPTER IV.

Inflammation of the peritoneum	293
CASE XL.—Acute peritonitis resembling continued ataxic fever	297
XLI.—Acute peritonitis, simulating nervous colic	301
XLII.—Acute hæmorrhagic peritonitis	305
XLIII.—Acute peritonitis following a chronic pleurisy	310
XLIV.—Chronic peritonitis become acute	313
XLV.—Chronic peritonitis followed by consecutive pleurisy	317
XLVI.—Chronic peritonitis following intermittent fever, becoming acute at its close	319
XLVII.—Chronic peritonitis with phlogosis of the mucous membrane of the digestive canal	322
XLVIII.—Chronic peritonitis complicated with chronic enteritis	324
XLIX.—Chronic peritonitis, dropsy	328

	PAGE.
CASE L.—Chronic peritonitis without fever following the administration of an emetic - - - - -	330
LI.—Chronic peritonitis, with tumefaction of the mesenteric glands, following an intermittent fever - - - - -	333
LII.—Chronic peritonitis with alteration of the mesenteric glands, supervening on intermittent fever - - - - -	337
LIII.—Chronic peritonitis resulting from a fall - - - - -	339
LIV.—Chronic pleurisy, carditis, and peritonitis resulting from falls	344
LV.—Chronic peritonitis with perforation of the intestines -	347

CHAPTER V.

General history of peritonitis - - - - -	349
Etiology - - - - -	<i>ib.</i>
SERIES I.—Mechanical or chemical irritations arising from the exterior	350
II.—Mechanical or chemical irritations whose source is in the individual - - - - -	351
III.—Organic actions depending on a derangement of the functions, the cause of which is more or less appreciable	<i>ib.</i>
Development and characteristic symptoms of phlegmasiæ of the peritoneum - - - - -	354
Progress and terminations of phlegmasiæ of the peritoneum - -	356
Complications - - - - -	359
Organic alterations - - - - -	360
CASE LVI.—Extraordinary development of the post-peritoneal cellular tissue, with lardaceous state and ulceration - -	363
LVII.—Dry phthisis, with lardaceous engorgement of the abdomen	370

CHAPTER VI.

Treatment of peritonitis - - - - -	373
Treatment of acute peritonitis - - - - -	<i>ib.</i>
1st. To remove all immediate irritation - - - - -	<i>ib.</i>
2d. To diminish the irritation in the suffering part, by modifying the circulatory and nervous systems - - - - -	374
3d. To establish in the circulatory and capillary apparatuses a standard of proper action - - - - -	377
Treatment of chronic peritonitis - - - - -	382
CASE LVIII.—Acute peritonitis, with irritation of the gastro-intestinal mucous membrane - - - - -	385
LIX.—Chronic peritonitis, following continued fever - -	386
Summary of the history of phlegmasiæ of the peritoneum - -	389
1st. Causes - - - - -	<i>ib.</i>
2d. Development - - - - -	<i>ib.</i>
3d. Progress and termination - - - - -	<i>ib.</i>
4th. Organic alterations - - - - -	390
5th. Plan of cure - - - - -	<i>ib.</i>
6th. Complication - - - - -	391
Conclusion - - - - -	392
INDEX - - - - -	395

SECTION SECOND.

INFLAMMATIONS OF THE ABDOMINAL VISCERA IN GENERAL.

WE have just investigated inflammation in the viscus most abundantly supplied with arterial capillaries and situated at the very centre of vital heat; in short, in the tissue most favourable to its existence in its greatest degree of intensity;* and yet how many obscure grades have we not remarked, which would have escaped notice, but for the closest and most constant attention! We will not then be astonished to meet with the same difficulties in studying inflammation in the membranous tissues, in which the fasciculi of sanguine capillaries are always slender, and in which the impression produced by thousands of foreign bodies are confounded with the sensation belonging to the pathological state of the organ: the phlegmasiæ of the abdomen are moreover more frequently obscure and misunderstood than those of the chest. I have often observed that, in their commencement, they were so slight as to escape the attention of the patient, and the diagnosis of the physician; and that in most cases they had a manifest tendency to assume a chronic state. How many motives for studying them with particular attention?

But do we not find a new one, if we seek to enlighten ourselves, by reading the works of authors who have established or perfected the other parts of the science? We venture to assert that the practical books present us with nothing certain in relation to these affections.† Every practitioner explains them according to the system he has adopted, and treats them conforma-

* I allude here solely to the lungs; there was no chapter on cerebral phlegmasiæ in the two first editions.

† Since I wrote this text I have become acquainted with numerous researches in pathological anatomy. I have seen some classifications of organic lesions, many of which have some relation with those which I have described; but I have not found associated with them, a catalogue of the symptoms by which they could be recognised, or suspected to exist in the living body.

bly to certain notions which are often entirely erroneous. The humoral pathologist sees in the abdomen only saburra to dilute or evacuate; the Brunonian never perceives any thing but asthenia. The first never attempts to cure phlogosis of the abdominal organs until it has reached its utmost degree of intensity, and his books describe it only in this grade; the second will not allow of the term sthenic inflammation being given to any phlogosis of the abdomen, doubtless because they do not produce a large pulse, and a highly flushed face. The one believes that an abdominal affection cannot commence or terminate without purgatives; he sighs for the moment which will permit him to administer one: the other proscribes with an arrogant severity, all evacuants and relaxants, and fearlessly gives stimulants of every description.

Which then must we believe, and which can we follow with the least danger? Our uncertainty will never cease until we shall have a good history of phlegmasiæ of the abdomen, which will enable us to compare the symptoms appertaining to the most obscure phlogosis of the viscera of this cavity, with those which depend on their feebleness or their fullness. But we shall never be indebted for this, either to the humoral pathologist, or the Brunonian, or the fanatic sectary of the chemico-vital theory, or those obscure and purely speculative logicians, who follow in the treatment of human infirmities, the chimeras of their imagination, rather than the real disorders which are presented to their senses: * *oculos habent et non vident*.

We shall owe it to the observing physician, who will not disdain the experience of others, but who wishes to sanction it by his own; who never will attempt to investigate morbid affections except by the light of physiology; who knows the limits of his senses, and who will always be sufficiently master of his logic not to permit himself to be drawn into the boundless domains of imagination. There are still many of those severe and judicious spirits who are born to complete the regeneration of medicine: it was for France, which has made such immense progress in the natural sciences, that it belonged to produce them. Our schools of medicine, which have freed themselves from the yoke of ancient systems, and preserved themselves from the contagion of

* I have since designated these by the word ontologists.

new ones, have formed for some years past, individuals capable of steadying the still faltering steps of the healing art. Mingled with their countrymen, or scattered at a distance in our armies, they observe, and silently meditate side by side with the arrogant systematist, who, without possessing any knowledge, is constantly brawling. One day their voices will also doubtless be heard; they will modestly offer to their collaborators the disinterested homage of their precious labours; the brightness of truth will strike all eyes, and the reign of medical illusion will be past. We shall then have presented in one view all the delicate grades which compose the long series of irritations of the abdomen. In the mean time I proceed to offer to my colleagues what I have collected respecting these deceptive inflammations. My observations will have little bearing on phlegmasiæ of the liver, spleen, pancreas, or kidneys. These diseases are rare, and I have not seen a sufficient number of them to undertake precisely to indicate the disorders which their lesion may create in the economy.

I shall devote attention specially to the phlogoses of the alimentary canal and those of the peritoneum: almost all these are chronic,* or at least they become so in soldiers, from the circumstances in which they are placed. I wish then at present to fix the attention of my readers upon the mode of slow deterioration of the system, produced by a phlogistic irritation of the different tissues of the alimentary canal.

The general object is to learn how to cure; unhappily it is not always attainable in inveterate phlegmasiæ; but it may still be accomplished more frequently than in those of the chest. Besides, it will necessarily result from my labour, that the importance of the treatment at the commencement of the disease will be perceived, and that a rather clearer idea will be entertained of the signs of this other mode of irritation, which is successfully treated with evacuants.

* In fact, more of them are chronic than acute; there are but one or two fevers called *essential*, which are acute gastro-enterites, during the course of life, and there is experienced afterwards for many years dyspepsia, hypochondria, supposed obstructions, &c. which are chronic gastro-enterites.

CHAPTER I.

Inflammation of the Mucous Membrane of the Alimentary Canal.

IF we take into consideration the number and variety of foreign bodies, of a more or less stimulating character, that are incessantly applied to this membrane, it will appear strange that it does not still oftener experience the phenomena of inflammation. Those of the bronchiæ, and of the organs of generation, appear still more exposed to them. Catarrhs, leucorrhœas, and blenor-rhagias, are more easily produced than gastrites, which are so little known,* that French authors have been obliged to recur to cases of poisoning, to present them to us in their greatest intensity. In fact, the phlogoses of the gastric mucous membrane have not as yet been treated *ex professo*, except in cases of poisoning.† The author of the excellent “*Treatise on Poisoning with Nitric Acid*,” Dr. Tartra, was fully aware, that to present a complete view of the subject it was necessary to arrange the cases according to their severity and duration. So judicious an observer was well calculated to elucidate this portion of nosography; but, too circumscribed by his subject, he was not able to compare the action of other causes which constantly phlogose the lining membrane of the gastric passages, with those of which he was studying the effects. The consequence is, that his work, although presenting gastritis of all grades, only offers, in fact, one of the forms of this disease. We also find two others in some valuable inaugural dissertations, on the effects of sulphuric acid, and oxide of arsenic introduced into the digestive canal, and yet we are deficient in a work capable of elucidating the most common cases, and which the physician may meet with at every turn in his practice.

We constantly see a host of individuals who pass their life in

* Although less known than these affections, they are still more frequent, as I have demonstrated since this work was written.

† Pujol de Castre has mentioned these diseases, but has not entered into any details respecting them. (See *Examination of Medical Doctrines*.)

harassing the stomach with every incendiary article produced by the two kingdoms of animated nature, and our books of pathology speak to us only of gastric embarrassment, and of bilious or mucous saburræ. If a drunkard loses his appetite, and perishes of inanition from a loss of the digestive powers of his stomach, we are for the most part told of the loss of tone only, the corrugation of the fibres of the stomach, or the coagulation of the fluids, resulting from an abuse of the digestive powers. If he becomes dropsical, if he perishes from diarrhœa, the same explanation is given.

Nevertheless, the father of French clinical medicine has described chronic gastritis to us under the title of catarrh of the stomach. He assigns as its fundamental character, difficult digestion, with rumination, vomiting of food after eating, and of phlegm in the morning when fasting. He considers this state as conducing to scirrhus of the pylorus. (See *Nosographie Philosophique*.)

Gastritis, therefore, appears in our authors under two forms; 1st, in consequence of corrosive poisons, when it appears in its highest degree only, and with symptoms peculiar to the article; 2d, from the abuse of hygienic influences, but here it is only presented to us in one of the grades of the chronic state.

Thus the history of gastritis is as yet very little advanced among us. The climate, it is true, does not appear favourable to it, especially that of our large cities, where cold and humidity predominate. It is doubtless for this reason that it has not yet appeared to our practitioners to merit a monograph. Nevertheless, I dare assert, that it is much more common in France than is imagined, thus taking for granted that it is often misunderstood.*

It is from post mortem examinations that I have learnt to attribute certain disorders, which I had hitherto regarded as depending on each other, to inflammation of the internal membrane of the alimentary canal.

Of the four phenomena on which it was customary to found

* There was a note relative to M. Prost, who is asserted to have attributed several fevers and mania to inflammation of the mucous membrane of the stomach and intestines, but as I do not wish to admit any controversy in this work, I can only refer my readers to the *Examination of Medical Doctrines*. I will content myself by here stating that this author did not consider the inflammation spoken of in the same light as I do, and that in my estimation he misunderstood it.

the special character of inflammation, and which we have restricted to the highest degree of sanguine phlogosis, there are only two which can leave traces in the dead body; these are redness and tumefaction. When I found these in the gastric mucous membrane, as well as the ulceration which is consecutive to them, I endeavoured to remember whether the heat and pain had existed during life. In most instances these two phenomena had been evident; when they did not appear sufficiently manifest to me, I recommenced my observations on fresh subjects affected like the former, and I constantly found that the fundamental symptoms might be referred to an increased sensibility of the same tissue that appeared red and tumefied in the body.

Here are then three phenomena of sanguine inflammation; as to the fourth, or heat, it was not always easy to verify it, because the feeling of local heat does not persist in the phlegmasiæ, beyond the acute state. Nevertheless, it may almost always be reproduced by irritants. Besides, have we not proved that morbid heat is only a modification of pain, and that it may be wanting, without this giving us a right to deny the phlogosis when the other characters are to be met with? This truth, and all those which are derived from it, have been developed in the general observations on inflammation; I will refer the reader to them, that he may admit that "*every local exaltation of organic actions, sufficient to disturb the harmony of the functions, and disorganize the tissue in which it is seated, ought to be considered as an inflammation.*"

Hence the signs of phlogosis of the gastric mucous membrane are; 1st, during life certain lesions of functions referable to an increase of sensibility in the mucous membrane; 2d, after death, redness and ulceration of this same membrane.*

I know that many physicians will not be of my opinion, and that the name of inflammation is denied to the redness of the membrane of which we are speaking, when it does attain a high degree, and does not keep up a febrile action. I foresee that many persons will at first scarcely persuade themselves that some apyretic anorexias, some vague nauseas are sufficient to charac-

* To this must now be added the blackness which usually succeeds to the redness; there are even cases where the congestion is sufficient to prove the existence of a phlegmasia.

terize a mucous inflammation of the stomach. It is to reply to these objections that I wish to let facts speak for themselves, and to arrange them on a scale of sufficient magnitude, that the ties which unite the most violent gastric phlegmasiæ to the slightest and most obscure may be distinguished.

Before practising in Venetian Friuli, I but rarely met with gastric phlogosis in the military hospitals. The sporadic cases of diarrhœa I observed at different periods, were generally unaccompanied with violent colics, and yielded to wine, rice water, and diascordium, which I gave with the intention of restoring the tone of the intestinal canal.

Diarrhœas of a higher grade, accompanied with tenesmus, colics and fever, were rare in Holland, a cold and humid country, which is not favourable to inflammations of the abdomen,* I had, nevertheless, attributed them to phlogosis of the mucous membrane, and dissection had also convinced me that they ought to be placed in the list of catarrhs, as has been done by Dr. Pinel, after Stoll and Borden. They began to appear at Helder, whilst the army was embarked an XIII. (1805.) The short time our troops were afloat, did not permit this disease, or *typhus*, which raged at the same time, to make much progress. The army took up the line of march, the season became cold, and notwithstanding the fatigue, and the humidity of their clothes, to which soldiers are incessantly exposed in an active campaign, dysentery but rarely appeared. I collected five or six cases only of it, both at Bruck and Laybach. Pulmonary catarrh was always predominant.

The 1st of March, 1806, our *corps a'armée* opened a hospital at Udine, in Friuli. During all this month, when the weather was variable, sometimes pretty warm, and often cold and damp, there also appeared but few cases of mucous phlegmasiæ of the alimentary canal. That which opened the scene was terrible, and chose for its victim a very interesting young surgeon, who died in the acute stage. I will insert his case at the head of the list, as it is striking, and appears to me calculated to throw light on the but too common causes of this disease. It was a gastritis. As soon as the heat of the weather was well marked, I saw this

* They are produced in cold countries, by causes differing from those which occasion them in hot, but nevertheless they are always irritating.

terrible disease increase, and from its commencement it was complicated with dysentery, or presented itself at the same time as the latter in different patients. Sometimes the gastritis preceded, at others it occurred in the advanced stage of enteritis only.

In April, May, June, July, and August, these two diseases were very often united in the same subjects. All the gastric affections had something inflammatory, which exacted the greatest circumspection in the use of the means most commonly employed. From this epoch to the end of the year, the gastritis first began to diminish, the dysentery persisted, and complicated almost all the intermittent fevers; finally, in January, 1807, there were scarcely any more cases of recent gastric or intestinal phlogoses.

This troublesome complication of intermittent fever with gastric phlegmasiæ, rendered the treatment of this morbid constitution extremely delicate. The stomach refused the use of bark, wine, and the bitters did not agree better with it. I was reduced to a very laborious search, to find out what medicament was best fitted to break up the febrile habit without compromising the always fragile organization of the gastric mucous membrane. This circumstance will oblige me to speak of intermittent fever under the head of gastric phlegmasiæ, as I have already spoken of it when treating of pectoral phlegmasiæ. I will do this the more willingly, as I think I shall be able to deduce several conclusions from my observations, which will likewise be practical truths, useful to the history of chronic diseases.

I will endeavour in the detail of facts, to proceed as I have hitherto done, from the most evident to the most obscure; thus, by at first taking the disease in the stomach, and following it to the lower extremity of the alimentary canal, I shall commence by those phlegmasiæ in which the functions have been deranged in the greatest degree, and the circulatory apparatus the most affected. Nevertheless, I ought to premise that these diseases are subject to a multitude of combinations of different grades, which will not permit me to arrange the cases in the order I would desire.

I. PARTICULAR CASES OF GASTRITIS.

CASE I.—*Acute gastritis, simulating catarrh and continued ataxic fever.**—M. Beau, assistant surgeon in the eighteenth regiment of light infantry, aged twenty-four years, brown hair, above middle height, slender, narrow chest, sunken sternum, had several times experienced very severe colds and attacks of hæmoptysis. He was not given to women, but he had a passion for study, to which he often sacrificed the hours destined to repose; he had just made the campaign in Germany, during which he had suffered much fatigue, when he was employed in a hospital that had been established at Gorizia. He staid there fifteen days, during which time he breakfasted every morning on bread soaked in sweetened red wine. He perceived that this regimen heated his stomach much, (heretofore he had breakfasted on coffee,) and that he became more excitable.

He called me in, on the 7th of March, at Udine; he had been sick for seven or eight days, and complained of a very uncomfortable gastric heat and loss of appetite. He told me he had had a cold for some days past, and that the fever had increased more and more. I remarked a very high fever, a large, hard, irregularly intermittent pulse, intense heat, mouth natural, little thirst, and altered appearance. He complained of a violent pain in the breast, and great constriction, which he referred to the epigastrium. He experienced violent anxiety, turned himself constantly, uttered piteous groans, and appeared much affected with his situation. At first he had spit but little blood, but he now could not cough in spite of the irritation which constantly urged him to it, from the violent pain the shocks to the chest occasioned him.

The pulmonary irritation and the force of the pulse indicated bleeding, but its intermittence, the alteration of features, and the recent residence of the patient in a hospital where contagious typhus had reigned, made me dread that it would prejudice the nervous force. I advised a decoction of fresh figs, and a blister to the sternum, the pain in the breast appearing universal. The patient refused the blister, and soon became disgusted with his drink.

* It simulated it so well, as to be, in reality that disease.

The next day, the eighth, the anxiety was greater, the fits of coughing tormented him without cessation. He detailed to me the cause and progress of his epigastric pain, and added, that having wished to take a little wine and soup on the first days of his disease, he vomited these substances. He urgently requested me to bleed him. I advised him to have seven or eight leeches applied around the epigastrium. I had scarcely left him when he caused the application of sixteen.

During the night the bites bled abundantly, the hæmorrhage was arrested with much difficulty, and in spite of the patient, who took pleasure in seeing his blood flow.

The next day, the ninth of the disease, I found him pale, the pulse feeble, the skin cold, and fainting on the least movement. The pain in the breast had disappeared, and scarcely any cough remained; the patient had been delirious during the hæmorrhage. I ordered him an infusion of bark with mucilage, and some spoonfuls of sweetened wine;* all this was vomited as soon as swallowed. The anxiety, uneasiness, and agitation reappeared. I tried some juleps, made somewhat aromatic and antispasmodic; they were rejected; beef tea was equally so; it was necessary to restrict him to mucilaginous drinks acidulated with lemon juice. The patient took these with pleasure, and did not vomit them.

Two days afterwards, the lypothymia ceased, the pulse rose, but the anxiety was increased in the same proportion, and slight fits of coughing recommenced. I could not induce him to take any thing but the acidulated mucilaginous potion.

The twelfth day M. Beau ceased to take notice of what passed around him; the pulse suddenly fell, the mouth became encrusted, he rejected all tonics.

The thirteenth day, after a tolerably abundant use of the mucilaginous drink, and lemonade, which he always took with pleasure, susceptibility being awakened, he began to swallow some spoonfuls of the mucilaginous drink, aromatised with orange-flower water and orange peel, and to bear Cyprus wine in small quantities.

I profited by the stupor in which he was, to apply blisters on the thorax and extremities, to which he had always shown an

* This fault is likewise committed by many practitioners. This patient should have been left in his state of debility, by giving him a little sugar or gum and water.

insuperable repugnance. From this time he swallowed all the cordial medicaments that he was desired to take, and did not vomit them, except when they were given at too short intervals.

Notwithstanding these means, the symptoms made rapid progress; he ceased to reply to any question, he no longer could put out his tongue, and he laid with his eyes half closed, constantly sighing, and making vain efforts to cough, especially when his breast was uncovered, moving his arms every moment, which he often crossed behind his head, or held in a perpendicular position. He changed his attitude almost every moment, sometimes he suddenly uncovered himself, and laid on his abdomen across his bed.

In this agitated state the unfortunate Beau passed whole nights without tasting the sweets of sleep for a single instant. The pulse, which was always irregular and intermittent, daily grew weaker. The skin lost its heat, the encrusting of the mouth was very variable in consistence and colour, and sometimes was entirely wanting. The face fell away, without becoming either yellow, earthy, or livid, as in true typhus; it always preserved the colour of healthy flesh; it appeared that he was deprived of his intellect by the violence of the pain only; he had almost continued grinding of the teeth; neither dyspnœa nor agitation of the chest were to be remarked.

From the reünion of these terrible symptoms I could no longer mistake a gastric phlegmasia, but as the danger was imminent, I did not rely on myself alone. I aided myself by the lights of a distinguished physician, who judged that the disease was rather ataxic than inflammatory, and stimulants of all kinds were lavishly employed. The unhappy young man no longer had strength to vomit them; but his cruel anxieties augmented in proportion as he took them.

The sixteenth day, the whole of his body was agitated with a convulsive trembling. The seventeenth his face contracted, his pulse declined still more, towards evening he was in a profound coma. The eighteenth, absolute immobility; drinks flowed out of his mouth, or entered the trachea, the skin was of an icy coldness, the pulse scarcely perceptible, the respiration slow, but neither laborious nor convulsive. The light breath of life which still animated him, was dissipated during the night.

AUTOPSY. Habitude.—The body was deprived of fat, but the muscles were prominent, well coloured, and firm; there was no fœtor. *Head.* Pia mater much injected, especially in the left hemisphere; cerebral substance consistent and red; ventricles somewhat dilated by a limpid serosity. *Thorax.* The two lobes free and very healthy. *Heart* in a good state, no liquid in the pericardium. *Abdomen.* Stomach contracted, reduced to the size of a small intestine, of a hard consistence, its mucous membrane thick, and of a deep livid red, almost black in a number of spots, throughout its whole extent. All the intestines diminished in size, and strongly contracted, their mucous membrane dry, and of a brilliant red. The capillaries of the mesenteric vessels much injected; no fœtor.

Observations.—This disease may be regarded as a prototype of inflammation of the stomach.* It was induced by a stimulating regimen, and by the use of sweetened wine, which had gradually augmented the sensibility of this organ. It would have been infallibly prevented if the lemonade had been used when the phlogosis began to be sufficiently intense to influence the general circulation; perhaps I might even have arrested its progress if I had insisted on the use of acidulated mucilaginous drinks, in spite of the debility occasioned by the hæmorrhage from the leech bites. I will confess this accident made me fear the consequences of the adynamia. I was not yet sufficiently convinced of the necessity of emollients to a phlogosed stomach; I had seen stimulants lavishly employed in ataxic fevers, notwithstanding the vomiting. It is true, that as regards myself, I had not adopted this plan, always dreading a phlegmasia much more than adynamia in young persons; but the enormous loss of blood M. Beau had experienced, appeared to me as making an exception.

I then tried tonics; their ill success led me to abandon them; but I dared not alone withstand prejudice, and the result of the consultation I requested was, that it was necessary to gradually accustom the stomach to stimulants, as it was important to relieve the prostration. The gastric mucous membrane was not supposed to be as red, hot, and sensitive as the skin in an erysipelatous state, or as capable of being irritated by the immediate application of stimulants. We were not firmly convinced that, in cases of

* And of the small intestines, for it was a gastro-enteritis.

general debility and local phlogosis, it is very erroneous to place irritants in contact with the inflamed spot in order to reanimate the forces. If as I have proved, there is danger of stimulating in pectoral phlegmasiæ, notwithstanding the general debility, if it is advantageous to still more enfeeble an already debilitated man, to triumph over a catarrh or chronic pleurisy, even when the stimulants are applied at a distance from the suffering spot, how much more reason is there to be circumspect in the internal use of these substances when the sensibility is accumulated in the stomach.

If the disease of M. Beau did not convince me of these truths, it at least led me to experiments, which tended to dissipate all my doubts, and to demonstrate to me how far they might be applicable at the bed-side of patients. I had continually in recollection the convulsive agitations and contortions of this interesting young man. I constantly bore in mind their prodigious augmentation, when the exhaustion of the forces of the stomach, which no longer rejected any thing, permitted us to gorge him with cordial and antispasmodic potions. It was enough to put me on my guard in all gastrites which might present themselves.*

The case of M. Beau also serves to elucidate a question which would not have failed to embarrass me. It proved to me that bleeding does not extinguish a phlogosis of the stomach, as it removes a peripneumony, and that it is useless without the concurrence of emollients. I soon saw that with these latter means we might most generally dispense with it. I have since had sufficient occasion to convince myself that sanguine evacuations are a very feeble resource in the inflammations of hollow and membranous organs, when these tissues are not applied on a parenchyma. They are the remedy for thick organs abundantly supplied with sanguine capillaries,† and it is also in these kinds of affections that the pulse acquires that force and consistence which invites us to detract blood.

Although the pulse of M. Beau was tolerably vigorous, it had

* This was not enough, since I gave wine and water in *adynamic fevers*. But why have not more experienced practitioners than myself deduced from this fact, that all these diseases ought to be treated by antiphlogistics? It is because they refer them to *essential fevers*. It was, therefore, important to destroy these latter.

† Without doubt, but leeches are the remedy for membranous phlegmasiæ.

not that fulness which marks the inflammatory engorgement of the pulmonary parenchyma, the face had not the tumefaction and deep colour of it, the cough was then rather sympathetic, and dependent on the sufferings of the nervous extremities of the eighth pair, the trunk of which furnishes branches to both viscera. In fact, the autopsy presented no traces of pulmonary phlogosis, and in several gastritis that I have since met with, I have also observed this complication of cough, although there was no idiopathic lesion in the lungs. The following case will offer the same complication in an individual who does not appear to have been subject to diseases of the lungs. At the same time an organ which is at first only sympathetically affected, may become organically disordered by the mere effect of pain.* The lungs more especially, which are never affected without being agitated by violent shocks, may throw out blood, or even be readily engorged, when they do not really become inflamed.

I would make the same remark as respects the brain; the point of so many painful sensations, how can it remain for any length of time in this state of painful erection, without becoming disorganized? Neither the hue of the physiognomy, the colour of the excretions, nor the state of the forces, nor in fact any thing, demonstrated the existence of true typhus. Two days after the hæmorrhage, the pulse having regained a satisfactory strength, the faintings no longer took place; nevertheless, the patient had absorbed nothing which could supply the place of what he had lost. In the torments of his long agony, which lasted not less than four or five days, his muscles were so energetic, that he turned himself with quickness, and often pushed back the nurse when she wished to restrain him; sometimes he was seen to raise himself upright, and then throw himself down on his bed. All this bears no resemblance to the convulsive movements of ataxic fevers. I have since learned that these agitations were always the most violent after he had swallowed some spoonfuls of wine or of the aromatic potion. Finally, after his death, nothing was found that could give an idea of the fatal and decomposing action of the contagious miasmata of typhus.†

* This truth has been developed in the *Examination of Medical Doctrines*.

† It is known that I have refuted myself on this point, and that I have demonstrated that all typhus fevers are based on gastro-enteritis.

The disease of M. Beau then presents us with a vivid picture of the disorders that phlogosis of the stomach may occasion in the functions of the economy, it has shown them to us in a high degree, and still more exasperated by an inappropriate treatment. Let us now see this phlogosis in other subjects, and above all, endeavour to distinguish what influence it appears to receive from different kinds of medicaments.

CASE II.—*Acute gastritis with rheumatism, simulating inflammatory catarrh.*—Carbolin, aged twenty-nine years, dark complexion, exceedingly hairy, large chest, full and energetic muscles, (this man had remarkable strength,) high colour, gay and quick character, was attacked in December, 1806, with a rheumatism, which gradually increased, and forced him to enter the hospital. He was at first placed in the surgical ward; the surgeon-major finding him with fever and vigorous pulse, had him bled. The pain after having been for some time in the loins, was now felt in the left arm. A blister having been applied there, the arm became swelled, hot, and painful; this, however, diminished much, when the blistered surface healed, but it still remained more sensitive than in the ordinary state, and the forearm was a little œdematous.

Nevertheless, Carbolin appeared cured, he was without fever, and eat a three quarter's allowance morning and evening, without taking any medicine, when on the 4th of February, 1807, the surgeon-major perceiving that the patient coughed, and that a violent fever had supervened, transferred him to the fever wards, where I received him on the 5th.

He then had had sixty-three days of rheumatism and three of catarrh and fever. The following symptoms presented themselves; frequent, active, tolerably hard, but not a large pulse, skin hot and halituous, face suffused, especially on the cheeks, tongue whitish, a little dry, anorexia, and an equal loathing of all kinds of drink, frequent but slight cough, expectoration tolerably copious, no fixed pain in the circumference of the thorax; but he pointed out the right side, below the sternal ribs, as the seat of a deep-seated pain; respiration agitated, the left arm somewhat œdematous.

Who would not have believed from this group of symptoms, that the patient was affected with a violent catarrh closely allied

to peripneumony? I prescribed demulcents and eight leeches on the thorax; I did not wish to bleed a man who had but lately submitted to this operation, and who had already been two months in the hospital.

The leeches were not applied. The next day, the fourth, greater softness of the pulse and diminution of its frequency, but still constant fits of coughing. Prescription of a blister to the chest; it was by mistake applied on the diseased arm.

The fifth day enormous swelling of the whole of that limb, and erythematous redness of the skin, both of which extended to the neck; absolute impossibility of deglutition; whatever the patient attempted to swallow was returned as if having met with an obstacle. I had prescribed the evening before an etherized and kermetized pectoral julep, thinking it necessary to facilitate the expectoration of the sputa, which were only viscous and not in the least tinged with blood. I proposed at the same time to produce a gentle determination to the skin, and to favour the resolution of the supposed phlegmasia of the lungs, which the softness of the pulse led me to hope might be readily effected. The scene was now greatly changed; the pulse had assumed more frequency and hardness than I had yet found in it, the face was of a deep red, and there was considerable anxiety, but the patient was not as restless as M. Beau; he contented himself with throwing his head from side to side with an air of suffering and inquietude that alarmed me; I thought that the renewed phlegmasia of the arm had added to that of the lungs, and I immediately hastened to order a copious bleeding; it procured some relief.

The sixth day, smallness and extreme frequency of the pulse, very great anxiety, continual fits of coughing, nothing could be swallowed. The swelling of the arm still very considerable.—Emollient fomentations.—The patient could not bear the heat, and obstinately kept his breast uncovered. I yield to the indication; lemonade.

The seventh day, the frequency and anxiety were greater; he swallowed some drops of lemonade. Extreme agitation of the breast; he says that the fits of coughing occasion a lancinating pain; the unexpectored mucus accumulates in the trachea and mouth. Features elongated, livid redness of the malar eminences; constipation has lasted for a long time; enema; same remedies as the preceding evening.

Eighth day, same symptoms, but they are augmented. An evacuation after several oleaginous enemata. He swallowed some small spoonfuls of acidulated mucilaginous solution and of lemonade. Prescription of acidulated oleaginous draughts.

The ninth day, greater anxiety than ever, face contracted and altered; both arms swelled; respiration hurried and already rattling; the impossibility of swallowing persists; ejection of a large lumbricus by the mouth, with many contortions, grinding of the teeth and convulsive movements of the face. He can scarcely speak.

The tenth day, passed a very bad night, feels very ill, low groans, agitation of the arms, which are somewhat less swelled, contortions of the face, total absence of deglutition, the rôle is marked, it was a real death agony. Increase of these symptoms about the middle of the day, when he died.

AUTOPSY.—Habitude. Body dry and very muscular; but little swelling was perceptible in the two arms; all that in the neck had disappeared. The muscles well coloured; no fœtor. *Thorax.* The two lungs free, crepitant. They were a little engorged at their superior portion. *Heart* in a very good state, and not large in proportion to the stature of the subject. *Abdomen.* Stomach not larger than an intestine, contracted, hard, coriaceous, and difficult to be cut; its mucous membrane thick, of a deep red, and approaching to violet at the pyloric orifice. The small intestines contracted, their internal coat red; the colon so much contracted that its mucous coat was every where as firmly in contact as that of the stomach. There was nothing in this intestine; its internal surface was of a vivid red and without ulceration. This disposition existed from the cœcum to the anus. All the other viscera without any apparent disorder. *Extremities.* The subcutaneous cellular tissue of the left arm was infiltrated with white and consistent pus. It had collected to the amount of some drachms in two or three small abscesses which were situated immediately on the aponeurosis of the extensor muscles of the forearm, not far from the elbow joint. The cellular tissue of the forearm was not injected with pus, but with a transparent lymphatic matter, much denser than the ordinary serosity of asthenic œdema. The adipose cells of the right arm were infiltrated in the same manner, but without any purulent abscess.

Observations.—For two years I observed gastritis, and I at

first misunderstood it. The absolute want of deglutition I attributed to the swelling of the arm having extended to the neck. I even figured to myself that the irritation might have advanced along the cellular tissue which surrounds the axillary vessels, so as to reach the mediastinum and there occasion a point of irritation which presented an obstacle to the passage of drinks. Afterwards, finding that lemonade passed with less difficulty than any other substance, I recognised an irritation of the stomach, but thought it secondary. The cough and the dyspnœa I always considered as unequivocal symptoms of a violent phlegmasia of the parenchyma of the lungs. It required strong proof to convince me that the phlogosis of the mucous membrane of the stomach could communicate an irritation to the lungs capable of simulating the symptoms of peripneumony.

Although the pectoral symptoms were tolerably well marked in M. Beau, they were not as predominant as in Carbolin; on the other hand, those of the gastric irritation were more striking, since the stomach refused stimulating drinks. Finally, what might also have aided the diagnosis, was the avowal of the patient that he felt his stomach heated by the surreptitious use of vinous drinks and the repugnance he evinced for any thing that could create an impression of heat in this organ.

Now that we are informed of the result of the autopsy, it is shown that the gastric irritation was more considerable in Carbolin, whose stomach could not dilate itself sufficiently to admit even a spoonful of liquid. But the unfortunate coincidence of the swelling of the arm, extending to the tissue enveloping the trachea, was fully capable of creating the mistake. Vomiting, which is considered as a diagnostic mark of gastritis, could not take place, as the stomach contained nothing. Hence, the impossibility of swallowing, will indicate, when it can be attributed to the stomach, a degree of phlogosis of a higher grade than that of vomiting even, or at least, without the danger perhaps being greater, it may always be concluded from the presence of this symptom, that the muscular membrane has sufficient energy to close this organ entirely, to place its internal parietes in contact, and to maintain them in that state.

I am now convinced that this kind of convulsion is habitual in gastritis. But the symptoms by which it may be recognised are frequently wanting, doubtless from the slight susceptibility of

the patients, who do not distinctly feel the constriction inseparable from this state, or rather from the imperfection of their language.

Carbolin, although stout and athletic, analyzed his sensations pretty well. If he had been questioned on the first symptoms of his disorder, he would have pointed out some symptoms calculated to give me a clue, such as the epigastric heat, the distaste for food and warm drinks, &c. But our attention, wholly absorbed by the violence of the peripneumonic symptoms, did not permit either of us, he to trace a faithful picture of the past, or I to entertain sufficient doubt to ask the necessary questions.

Here then is that gastric cough so often spoken of by observers. Every practitioner knows that it exists, but I am not aware that they have attempted to describe it in such a manner as to render it readily recognisable by the young physician who engages in clinical practice. After again bringing it forward in the succeeding case, where the gastritis was not less insidious than in the two former, we shall endeavour to establish the characters of this cough.

CASE III.—*Acute gastritis simulating inflammatory catarrh.*—Guinel, aged from twenty-six to twenty-eight years, dark complexion, fleshy, and regularly formed, entered the hospital of Udine the 12th of March, 1807, stating he had been taken sick the evening before. I saw nothing at first except symptoms of gastric embarrassment complicated with catarrh. I only remarked that the mouth was very much coated and the cough very painful; hence, without distinguishing this patient from others, I vomited him, and put him on the use of mucilaginous pectorals.

The fifth day, counting from his admission, the sixth of the disease, Guinel particularly attracted my attention. I had given him the evening before a kermetized julep, to favour the resolution of the supposed catarrh; I observed much dyspnœa, a deep suffusion on the malar eminences, and ardent heat, with a hard, strong, and frequent pulse; but what struck me the most was a continual cough, not in paroxysms, but in violent shocks, which were repeated at almost every inspiration, causing great pain to the patient, and without any expectoration, except of a frothy and bloody mucus.

Notwithstanding all these symptoms of catarrhal inflammation he did not complain of any fixed pain in the side, but that the whole anterior part of the breast was very sore. The anxiety was extreme; the patient was actively restless, continually uncovered himself, uttered plaintive cries, testified an insurmountable distaste for all drinks, and complained of the extremely unpleasant condition of his mouth. He had had some evacuations from the bowels.

I began to suspect phlogosis of the mucous membrane of the stomach. But as I knew that it often coëxists with that of the respiratory organs, I did not think myself authorized to call this latter affection in question. I therefore contented myself with discontinuing every medicament capable of stimulating, and after having prescribed a copious bleeding from the arm, I ordered a blister on the thorax.

The eighth day of the attack, still not seeing any expectoration, and finding the pulse always large and vigorous, I prescribed a second bleeding and a second blister. I obtained much relaxation in the sanguineous system, but the anxiety, the restlessness, the fits of coughing, and the absolute want of expectoration had made fresh progress.

Several evacuations from the bowels had taken place, even with tenesmus. The cause of the general irritation now appeared to me more gastric than pectoral. I was sufficiently convinced of it the next day by observing that the anxiety increased, although the fits of coughing became less frequent.

I had nothing to do except to give the acidulated emollients in large quantities; they were not spared; the patient drank with less repugnance, and the gastric cough took place at longer intervals. A calm even appeared to be established; the mouth formerly dry and brownish, became moist; the air of suffering was less considerable.

He passed the day of the ninth in this state of amelioration. The tenth, although the pulse was neither very frequent nor hard, the thirst and restlessness increased. The patient often appeared to be depressed, the stools were more frequent. The eleventh and twelfth, thirst, anxiety, diarrhœa, depression, cough, and less difficult mucous expectoration than heretofore.

The thirteenth, appearance of relaxation, he says that he finds himself much better; little thirst, he is however always restless.

The fourteenth, the face altered, the respiration became embarrassed; the pulse tremulous towards the heart, subsultus tendinum.

The sixteenth. Somnolency, during which the respiration was agitated and bubbling, the mouth open, the features contracted, the body tremulous, and slightly convulsed. All this disappeared on his waking. This state degenerated into an agony, which carried off the patient during the night.

AUTOPSY.—*Habitude.* Body robust, fleshy, tolerably fat, without smell; muscles firm and well coloured. *Head.* A little serosity in the lateral ventricles. *Thorax.* Right lobe every where adhering, but by well organized productions, its parenchyma engorged, permitting much blood to flow out on being cut. No induration. Left lung nearly in the same state.* *Heart* healthy. *Abdomen.* Stomach half dilated, half contracted. Its mucous membrane every where very much phlogosed, of a violet red, and even black colour near the cardiac orifice; as if ecchymosed in the *bas fond*, and even presenting loss of substance in a part of its thickness, as is found after mineral poisons, and when there are worms. No worm was however discovered in any part of the canal. Deep redness in many places through the whole extent of the mucous membrane of the intestines. A very fetid sulphuretted gas escaped from them.

Thus Guinel permitted me to observe for the third time, a gastric cough simulating an idiopathic affection of the lungs, so as to deceive me at first. Disconcerted by this last error, I carefully compared the three cases with each other, to ascertain what they had in common as regarded this deceptive cough. I first found that it occurred in all three in fits, that the fits took place at almost every respiration, particularly during the relapses, that they never followed each other so rapidly as to present those violent paroxysms which swell and blacken the face; that they were diminished rather under the use of emollient and slightly acidulated drinks, than by sanguine evacuations. Such are the characters I have recognised in gastric cough. I am far from pretending

* I am now persuaded that redness existed in the bronchial mucous membrane of these three subjects; but I did not verify it. In fact, the cough although sympathetic, never fails to produce bronchial phlogosis when it lasts for a long time. It is thus that gastritis produces phthisis, as I have elsewhere said.

that there are not others. I am not ignorant that many pulmonary phthises announce themselves by slight fits of coughing. I know that practitioners talk of gastric coughs, which are more readily cured by emetics than by pectorals. It appeared to me for some time that I also had seen them, but I was never able to assign them their particular characters, before having witnessed these three cases.

As to the expectoration, I recognised that it could furnish no indication from its nature, since this is subordinate to the degree and duration of the irritation of the bronchial mucous membrane. But it appeared important to me to note that this excretion may be suspended by the treatment of the gastritis, to the advantage rather than the detriment of the patient, because it ought not to pass through all the degrees common to that of the true pulmonary phlegmasiæ, up to that white and close consistence, sometimes designated under the name of coction.*

Whilst making these reflexions, I looked attentively for gastric cough in the patients who filled my wards. It is rare, and I had much difficulty in clearly distinguishing it, as it most commonly presented itself in a far slighter grade than in those in whom I had previously observed it. Finally, I discovered it in a young man with a pale complexion, and who, notwithstanding a good appetite, remained always languishing. The facility of his digestion, the absence of that moroseness and anxiety which are inseparable from gastritis, led me to conclude that the irritation suffered by the stomach was not inflammatory. Enlightened by other symptoms, I believed it verminous. Consequently, I administered an emetic, which caused the expulsion of several *metres* of a tænia, and the patient was delivered from his cough. It afterwards returned, and again yielded to the effort of anthelmintics. This cough consisted, like the preceding cases, of slight fits provoked by an irritation, of which the patient could not point out the seat.

I had seen before, and have since observed this slight cough in children whose stomach is habitually disordered, and who have worms. It is even known to mothers and nurses; but I wanted such facts as I have detailed, to convince me that it might

* Primitive catarrhs may be also arrested in this manner. (See the 1st volume.)

be the effect of a phlogosis of the mucous membrane of this viscus.

The other symptoms of acute gastritis, no less insidious than the cough, cannot be too much studied. I believe that it will be useful to give another example of them, that we may have more materials to form a general idea of the disease.

CASE IV.—*Acute gastritis imitating intermittent ataxic fever.*—Venter, aged twenty-two years, chestnut hair, tall, slender limbs, moderate sensibility, presented himself the 1st of July, 1807, with the symptoms of a gastric embarrassment, that is, anorexia, slight nausea, and a little depression, but no more striking symptom. As I was fully aware at this time that these symptoms, accompanied with a refusal of the stomach to fulfil its functions, might depend on a susceptibility bordering on phlogosis, I treated Venter with demulcent and acidulated drinks only. His disease had lasted six days.

A tolerably prompt amendment permitted me to allow him such food as he wished; it was moreover difficult to refuse a man who walked about all day in the wards and corridors.

After five or six days of this ambiguous state, my patient complained of passing bad nights, he told me he had a chill, and that his ideas were confused. As I had used relaxants and demulcents for several days, I did not think there was any risk in opposing these nocturnal paroxysms by some doses of bark and a little wine.*

Not having obtained any amelioration this day or the next, I observed him in the evening, and found that he had a hot skin, contracted features, accelerated pulse, that he uncovered himself, and frequently changed his position.

From this time I was convinced that he had an obscure gastritis, which had a tendency to become acute and violent. I then insisted on diet, and the acidulated mucilages, but he was not relieved. I learnt from his neighbours that during those nocturnal agitations, he was delirious, attempted to get up, was affected with tremors, had grinding of the teeth, lost his consciousness,

* The fault which I then committed, is but too often repeated by physicians who refuse to study the physiological doctrine. How many victims are daily immolated to the chimera termed *ataxic fever*.

&c. These symptoms led me to doubt the phlogosis which had at first fixed my attention. Who would not under similar circumstances have thought of ataxic intermittent fevers?

I wished to satisfy myself more particularly of the nature of the disease. Venter, when examined the next morning, appeared restless and agitated, but still without any febrile action; his sufferings gradually increased as the day advanced, but he had no chill, or appearance of an attack of a paroxysm of intermittent fever. In the evening I found him senseless, the features prodigiously contracted, trembling, the breast and abdomen uncovered, and often turning himself; in short, in the state in which I have described M. Beau. He expired in the night, the twenty-second day of the disease.

AUTOPSY.—Habitude. No fat, but the muscles in good condition. *Head.* No appreciable disorder. *Thorax* the same. *Abdomen.* No meteorism, nor that livid appearance seen after malignant fevers.* The stomach not contracted, although its mucous membrane was thickened, red, and even black. That of the intestines presented the same appearance. The small intestines were slightly contracted, but the colon was so much so, that its cavity was destroyed. From the cardia to the anus the mucous membrane was phlogosed, contained nothing except a very white, very solid, membranous exudation, which it was somewhat difficult to detach.†

Observations.—As nothing announced in this body the action of the virus productive of typhus and the ataxic intermittent fevers, and as the gastric phlogosis was manifest, there is no doubt that this unfortunate patient fell a victim to the latter disease alone; that the first symptoms were not very decided, as the languor of the first days, with little appetite and nocturnal exacerbation without chill, that the mucilaginous articles employed at

* How long a time it required to convince me that this lividity is a product of inflammation! Those who accuse me of self-sufficiency in my ideas, do not know to what point I have carried a distrust of myself. It is the only reproach I have to make myself. Why did I not dare at this epoch to condemn the authorities which restrained me, and whose weight I already felt?

† Although there was no diarrhœa here, still the gastro-enteritis existed. I have never found inflammation of the stomach without that of the small intestines; and when these two predominate over the phlogosis of the colon, the latter will not induce diarrhœa.

this epoch were perfectly proper; that the febrifuges which were afterwards administered, militated against the resolution; that the nervous symptoms which were remarked towards the close, were the simple effect of pain and of the disorganization of a large surface so abundantly endowed with nervous papillæ and sensibility.

Such was the reasoning I then adopted, and which I find recorded in my journal appended to this case. It still appears to me very correct. Let us add a few reflexions. We do not here find the cough; perhaps this arose from the intestinal pain being greater than the gastric; for it is perfectly demonstrated that the lungs are more intimately connected with the stomach than with the intestines; perhaps also this difference was due to a less degree of intensity in the disease. Among the numerous gastrites that I treated in Italy, I did not find a fourth case accompanied with cough and marks of catarrh; none of them moreover were so intense.

It is then evident, that in the one to which Venter was a victim, the progress was less rapid and the exacerbations less violent and tumultuous; the circulation was less rapid; during the mornings he almost seemed to be in an apyrexia state; the disease was scarcely characterized in the nocturnal exacerbations; in short, it only became well-marked from being exasperated by injurious agents; for solid food, wine, and all substances which are endowed with the slightest stimulating action, cannot but aid the progress of the gastritis.

But although this disease presented itself in a milder form than in the preceding patients, and permits us to ascertain the first grade of the chronic state, we also find in it certain strong characters which were sufficiently marked in the three first to be seized and abstracted by our minds. Let us collect them before passing to less marked grades, where we shall often find but a slight trace of them.

The symptoms common to the four gastrites that I have just recorded, are, 1st. The repugnance for all drinks of a heating nature or temperature, and on the contrary, a desire for every thing which would communicate a cooling impression to the stomach; all resulting from the importunity of an acrid and devouring heat which the patients experienced both internally and externally. 2d. The pertinacity of the patients in uncovering their breast and epigastrium. 3d. The restlessness, the continual

change of posture in bed, by turning the body and placing the arms under the head or elevating them. 4th. The moans, sighs, inquietude without any determinate object, the grimaces and contortions of face. These symptoms, which always progressed in unison in violent acute gastritis, (I have often observed them in typhus complicated with gastritis, of which I shall not here speak,*) are sufficient to characterize the disease. We should never wait for those enumerated in authors, viz. vomiting and burning heat in the epigastrium, to form our diagnosis. These latter appertain to a higher grade, and, moreover, they as often indicate phlegmasia of the peritoneum as that of the internal membrane of the alimentary canal. The vomiting especially, varies much; it was absent in Carbolin from the very intensity of the disease; it will be met with in subjects where the latter was much milder.

The succeeding case will present a still more insidious gastritis, if this be possible, than the preceding, because it masks the greatest malignity under the traits of a perfidious mildness. To the rapid progress of the acute, it unites the symptoms of the chronic form, towards which it appears to me well calculated to conduct the reader.

CASE V.—*Acute and apyrexia gastritis.*—Rapion, aged from twenty-four to twenty-five years, dark complexion, fleshy, regularly made and robust, for several weeks past having lost his appetite, and feeling some nausea, had just taken an emetic, which only increased this state, when he entered the hospital of Udine, the 5th of June, 1806. He complained of five days of sickness, considering the loss of appetite and uneasiness which had preceded his present condition, as of little consequence.

This consisted in anorexia, a constant nausea, cephalalgia, a slight febrile action, and diarrhœa. On observing him attentively I found that he vomited his food, and that he had a continual pain in the stomach, which extended over the whole abdomen,

* My friend, Dr. Girard Girardot has since advanced the following proposition in his thesis: *in typho digestionis organa primario et præcipue læduntur*. But it will require a considerable time to convince the obstinate, and particularly the proud, who disdain to learn any thing from those who they have seen sitting by their sides on the benches of a school.

with a sensation of constriction; that his pulse was small, frequent, contracted, his skin rather cold than hot, and arid to the touch; that he was morose and dispirited. His figure appeared to me shrunk, but his complexion was nearly that of health; his tongue was very clean, and his muscular force did not appear to have diminished. I suspected gastritis, of which I had already seen a great number of cases, and I contented myself with prescribing mucilaginous, acidulated drinks, and emollient fomentations to the epigastrium.

During four days there was no change. The fifth I found him extended on his bed, with all his clothes on, for the anxiety in which he was did not permit him to remain lying down, and moreover the diarrhœa obliged him to rise every moment; he had an abstracted air, and said that he was very unwell; he was so little debilitated that he supported himself on his right elbow. Some hours afterwards he was taken with convulsions, a horrible anxiety, and fell into a syncope which terminated his life and his sufferings.

AUTOPSY.—*Habitude.* The body was fleshy, firm, and even fat. *Thorax.* Nothing remarkable. *Abdomen.* Contraction of the whole extent of the alimentary canal; its mucous membrane of a deep red colour, thickened, and without ulceration from the cardiac orifice to the anus. The redness was most decided in the stomach, the jejunum, the ileum, and the descending portion of the colon.

Observations.—We do not here find that violent disturbance of the circulation, of which the four first patients presented us with examples. Nevertheless, there was still some febrile action. The gastritis could here be distinguished from that state termed *saburral*, by the cleanness of the tongue, by the sensation of deep-seated, constringent pain, which extended over the whole of the abdomen, by the depression of spirits, and even the kind of despair to which the patient gave himself up.

Will not the less active sensibility, the less predominance of the sanguineous system, explain why the nervous and sanguine derangements were not as violent in this patient as in the four preceding? The diarrhœa, which scarcely appeared in them, begins to show itself here; it always testifies to us that the phlogistic sensibility was extended over a large surface, which sufficiently in-

forms us that it must be less active in the stomach. Nevertheless, the gastritis of Rapon was sufficiently painful to terminate like the preceding by fatal convulsions.

However, each had his peculiar suffering, both physical and moral. Do we not observe that grief renders some persons impatient, agitated, and even throws them into convulsions, whilst in others it produces a concentrated pain, which keeps them immoveable and taciturn? Will it therefore be said that they suffer less? Have not both states equally fatal results? Let us pursue the history of gastritis by another grade of it not less interesting.

CASE VI.—*Gastritis less acute than the preceding, complicated with biliary cystitis.*—Guillaume, sapper in the ninety-second regiment of infantry of the line, aged thirty years, robust, chestnut hair, the high and brilliant colour of a sanguine constitution, large chest, muscles of the extremities well-marked, came to the hospital of Udine the 28th of July, 1806, stating that he had been ill for seven days. On his arrival I observed drowsiness, deep injection of the face and eyes, anorexia, and even distaste for drinks, clean tongue, no bad taste, no stupor in the countenance, no aridity of skin, large and moderately frequent pulse; if it had been more accelerated, Guillaume would have presented all the symptoms of an angiotenic fever.

I treated him by bleeding and acidulated demulcent drinks; so far I had no suspicion of gastritis. The febrile action very slowly subsided, losing every day somewhat of its intensity; it did not run the course of a continued fever, which keeps up at a certain point for some time, and afterwards suddenly disappears.*

Finally, counting from the 15th of August, the twenty-fifth day from the invasion of the disease, the patient appeared to be convalescent. He had no fever in the morning, but in the evening the pulse became harder and a little accelerated. The appetite did not increase; Guillaume eat but a few mouthfuls when he felt full and cloyed. He had no nausea, he did not complain of any thing except of not regaining his customary vigour.

Justly alarmed at this obscure hectic, I repeated my questions every day, and obtained only the avowal of a deep-seated sensa-

* Or slowly.

tion of uneasiness in the lower part of the abdomen, especially towards the left side.* Not daring to hazard any energetic remedy, I persevered with the mucilages. Finally, I gave a little wine.†

The 23d of August, the thirty-third day, the appetite began to increase, the face became fuller. Guillaume appeared to me to be getting well; but as I feared to excite the sensibility of the stomach, I still wished to adhere for a few days to farinaceous food and muco-saccharine vegetables. The invalid lost his patience, procured meat, and found means to satisfy himself with it.

The following night, horrible colics, insupportable tenesmus, violent fever, terrible anxiety, convulsive depression of the abdomen, which was drawn towards the spine. Leeches to the anus, fomentations, baths, every thing was in vain; he expired the next day, the thirty-fourth day of his disease.

AUTOPSY.—Habitude. Body fleshy and even fat, muscles firm and coloured. *Head.* Slight serous exudation between the arachnoid and the pia mater; a little bloody serosity in the ventricles and cerebral fossæ; cerebral substance natural. *Thorax.* Both lungs attached to the ribs by sparse, but well-organized adhesions; nothing else remarkable. *Abdomen.* The stomach contracted towards the pylorus for about five inches in length, and reduced to the size of a small intestine, dilated at the large extremity, which presented a very large pouch filled with a mucous and bilious fluid; its mucous membrane thickened, red, and fungous in the dilated part, dry and pale in the remainder; that of the duodenum of a clear red,‡ that of the other small intestines healthy. The cœcum and right portion of the colon, to opposite the pouch of the stomach, dilated by gas, and filled with liquid, mucous, and fetid stercoral matters. The internal membrane of

* Notwithstanding all that I have since been able to write, there are yet practitioners who absolutely require the presence of an acute pain, even augmenting on pressure, to recognise an inflammation of the stomach. They cannot be made to comprehend that phlogosis of this viscus in most cases only becomes marked by means of the sympathies. Nothing can prevent them from pressing forcibly on the abdomen, in order to make the pain evident, and if they develop one which is somewhat obscure, they term it nervous. *O imitatores scrvum pecus.*

† Wine was not proper, but as I gave little of it, it did not do much harm; food would have produced much more.

‡ There was then also gastro-enteritis.

all this portion red, thickened, and fungous, the left and descending part of the colon, from the stomach to the rectum, prodigiously contracted, and filled with hard, dry, and inodorous excrements; the mucous membrane white and dry throughout this part. The constriction was so great that a stilet could scarcely be introduced between the intestinal parietes. The liver was in a good state, but the gall bladder was large, of a red-violet colour, filled with a viscid albuminous humour, resembling the white of an egg, without any of the characters of bile; its parietes thickened and hard; its mucous membrane very red, fungous, and phlogosed; its duct obstructed by the adhesion of its sides, from the orifice of the bladder to its union with the *ductus communis*, which was free.

Observations.—Now that this case is elucidated by the autopsy, it will be easily recognised as a gastro-colic phlegmasia, which, on the point of disappearing, was renewed by too abundant a use of food, but it was difficult,* during the first days of the disease, to form a correct idea of it. Let us recapitulate the symptoms. At first, appearances of an inflammatory fever, but the pulse had not the frequency of this disease. A slight gastric uneasiness and obstinate loathing of food were all which could enable us to attribute the cause of the febrile disturbance to the stomach. Gradual diminution of the irritation under the influence of debilitating and relaxing means. The febrile action became obscure and limited to a nocturnal exacerbation, and the appetite did not yet return. During this lapse of time, it might be supposed that the phlogosis began to subside. The appetite reappeared; because the stomach being less irritable, ceased to maintain a spasmodic contraction. The colon at this time gave very slight indications of its sufferings. Every thing was about to return to the healthy state, in spite of the disorganization of the gall bladder, whose disease there is no doubt was the most ancient. Could not the hepatic duct have sufficed for the wants of digestion? Has not the gall bladder been found totally obliterated in patients who died from a wholly different disease, and in whom assimilation did not appear to have suffered? All that was wanting to complete the cure of Guillaume, was to manage the susceptibility of the alimentary

* For a man who was still much prejudiced. I should now recognise this disease at the first glance.

canal. Suddenly the patient surcharges it with food, the stomach and colon become convulsed, the phlegmasia increases; the patient sinks under the pain.

This disease also suggests to us some physiologico-medical reflexions. The degree of the fever corresponds to that of the pain; at first it was feeble, the pulse slow, although every part was full of blood; during the last colics the pain became terrible, the fever likewise was developed with extreme violence. But, when we consider the temperament of the subject, it will be seen that he was athletic, of a fair complexion, and a tolerably obtuse sensibility; and it is known that these constitutions require a very active stimulus to develop a strong reaction. In general, muscular men are but slightly susceptible, but I have remarked, that such of these individuals as have light hair, are still less so than those with black or brown. These men in general, are among those in whom the membranous phlogoses make great progress, without influencing the general circulation in a great degree.

It is, therefore, very important to join the description of the patient to that of the disease. It will only be after having multiplied these kind of comparisons, that we shall be enabled to trace general descriptions, which will embrace all the forms of a disease. Until this point shall have been reached, young practitioners will always have much to wish for in elementary works.

If we again return to the consideration of the viscera of this patient, we will there find a phenomenon well calculated to enlighten us on the mechanism of the *profusiva*. Thus, where the mucous membrane was red, the excrements were liquid and fetid, where we find it white, they are deprived of all moisture. It is then the mucous excretion of which this membrane is the source, that causes the liquidity of the excrements; and on the other hand, the redness which coëxists with the abundant secretion of mucus demonstrates the state of inflammation. I am aware that this is not new. I have said that M. Pinel called dysentery *catarrh*; but neither this illustrious professor, nor any work I am acquainted with, have made a sufficiently wide application of this principle. It will be hereafter judged how useful this theory is in the treatment of all diarrhœas. It is sufficiently evident, that in Guillaume the phlogosed portion, both of the colon and stomach, must have acted with energy on the healthy part, spasmodically contracted, and in a sort of convulsive immobility.

The efforts of the peristaltic action not being able to effect any evacuation, increased with such horrible pain, that the nervous force was destroyed.

The happy success of the first means employed on Guillaume, proves that it would be very ridiculous to wish to cure similar colics by the diffusible stimuli called *antispasmodics*, or by a large glass of brandy, as is advised by Weicard. Another case demonstrates how dangerous it is to favour the tendency to vomiting depending on gastritis.

Neplet, a soldier in the eighty-fourth regiment, having suffered for twenty days from this anorexia, with nausea and sensation of epigastric constriction, which reigned epidemically among our soldiers during the summer of 1806, determined to take an emetic. He died during efforts of vomiting, in the same state as Guillaume. His body having been brought to the hospital, I opened it, and found the mucous membrane red and indurated, the stomach so contracted that its parietes were in contact.

I was also witness of a similar case, equally verified by the post mortem examination. The following, which I can give more in detail, will point out how insidious gastritis may be, and how much better it is to study diseases in monographs than in general treatises, which can only present us with the strongest marked grades.

CASE VII.—*Acute gastritis, arachnoiditis, apoplexy.*—Cornibere, aged from thirty to thirty-three years of age, corporal of grenadiers in the eighty-fourth regiment, light hair, white skin, large chest, muscles tolerably well-marked, passed nine days in the hospital of Udine, in April, 1806. He complained on his admission of debility, uneasiness, anorexia, and permanent pain in the head; his tongue was white and mucous. No febrile action. This state had lasted for six days. I thought it might be regarded as saburral, and an emetic was given. I afterwards administered a bitter draught, and a little wine, believing these means indicated by the feeling of weakness, of which the patient constantly complained, and by the coated state of the mouth. I did not find any elevation in the pulse, and gastritis was not yet very prevalent. As the cephalalgia deprived him of sleep, I added a grain of opium at night.

The pain in the head not yielding, I thought that the encephalo-

Ion might be attacked idiopathically, and I ordered a blister to the nape of the neck.—No change for five days. A pain in the ear took place, which I treated by emollient injections. The sixth, and succeeding days, Cornibere complained much of nausea which continually harassed him. He urgently requested me to give him an emetic. I began to suspect gastritis. I refused his request, and put him on the use of demulcents. His countenance altered, his complexion became yellow, and the debility went on constantly increasing.

The eighth day from his admission, the fourteenth of the disease, he vomited copiously, and threw up much blood. He soon also lost his faculties. I found him insensible, not acted on by the strongest stimulants, his eyes half opened, lying on the right side, the knees flexed, the face pale and much altered, the skin cold, the pulse small and feeble, no difficulty of respiration; finally, in a state of profound syncope. He expired the next day, without the blisters and cordials which I thought myself obliged to give him, having been apparently felt.

AUTOPSY.—*Habitude.* The body was fleshy, firm, and coloured, as in an individual who has suffered a violent death.

Head. The sinuses filled, the arachnoid covered with a grayish, purulent exudation over the whole cerebrum and cerebellum.

The lateral ventricles dilated by a purulent serosity. The pia mater injected and containing red clots in a great number of places; the cerebral substance hard and much injected, pouring out a bloody serosity on being cut. The inferior fossæ containing an abundance of a fluid analogous to that in the ventricles; on each side of the hemispheres of the brain, between the convolutions, opposite the petrous portion of the temporal bone, was a cavity situated on the lateral ventricles, containing two large clots. The portion of the pia mater which had exhaled this fluid were much injected, and its vessels of an extraordinary size.

Thorax. Every thing natural. *Abdomen.* The stomach contracted, and its parietes in contact; its mucous membrane of a deep red, thickened and disorganized, covered in several isolated spots, with a white, firm, and membranous exudation. Every thing else healthy.

Observations.—How insidious was this disease! Who would not have believed that he recognised what is called *saburral gastric embarrassment*, or that state of relaxation and mucous

predominance which all authors recommend us to correct by emetics? But did there exist any symptom capable of giving a suspicion of a phlegmasia of the stomach? Are not the failure of the emetic in producing a cure, and the obstinacy of the anorexia, notwithstanding the use of stomachics, certain proofs that the sensibility of the stomach was offended by the presence of stimulants? Now, as soon as this fact is demonstrated, the practitioner ought to substitute relaxants for them. This argument appears to me unanswerable. It is unfortunate not to be able to recognise the gastric irritation, *a priori*, but in most instances there is time to treat it. Experience has proved to me, that when this irritation is so obscure as to be misunderstood at its commencement, by a physician habituated to observe properly, it rarely progresses with much rapidity, and we have time to repair the evil that might have been occasioned by emetics and bitters. During the summer of 1806, a very great number of soldiers, attacked with this latent gastritis, were vomited before entering the hospital; several were purged, took stomachics, &c. and when the disease was not of too long standing, it constantly yielded to lemonade and the mucilages. The unhappy fate of Cornibere ought not to discourage us; it is evident that he perished rather from apoplexy than from gastritis.*

The derangements in the brain were considerable; the serous membrane had experienced an irritation of a phlogistic nature, all the extremities of the sanguine capillaries had thrown out blood, either by pure exhalation, or by rupturing, but always from the effect of an extraordinary and truly morbid stimulus. All this took place without violent derangements in the circulation of the large vessels, the heart having been only feebly influenced by the pain of the stomach and of the head, doubtless because it was moderate. The vague manner in which the patient detailed his sensations, might have another cause. If close attention be paid, it will be found that education renders men more attentive to what passes in their viscera, and teaches them to appreciate their own sensations in a more exquisite manner. Stupid and

* The apoplexy depended on the gastritis. (See the chapter on *cerebral phlegmasiæ*, where I have proved that the stomach is the most common stimulant of the encephalon, and that almost all the arachnoidites and cephalites which are not traumatic, are developed by the effect of a gastritis or gastro-enteritis, of which the sympathetic cephalalgia is converted into a phlegmasia.)

half civilized individuals sometimes have their viscera disorganized before they complain of it. An intellectual person, and one who is devoted to the imaginative arts, is so faithfully aware of the well-being or uneasiness of his organs, that he always calls for aid at an early period. I have remarked in the military hospitals, that young persons of education, and those who had a well balanced mind,* gave me much less trouble in seizing the diagnosis of latent and chronic phlegmasia, and for this reason, their treatment was often more successful than I anticipated.

If then Cornibere had been of that class of individuals whose sensations are precise, he would not have failed to have informed me of the painful constriction which is inseparable from chronic phlogosis of the stomach, he would have mentioned that stimulating drinks caused a sensation of heat in that organ. And I, on the other hand, if I had been accustomed to the physiognomy of this disease, would have questioned him at an early period on points I did not think of till too late.

In gastritis, the stomach is generally reduced to a small size, the intestines are contracted, although they do not partake in the irritation, because but little residue of the food passes into them. Consequently, gas is not abundant in the digestive tube; there are no eructations, borborygmus, or meteorism. But when the white mucous tongue and the continual nausea do not coincide with these symptoms, it may be taken for granted that the suffering of the stomach depends rather on phlogosis than on relaxation and saburral plenitude. This relation of symptoms has never deceived me. Besides, where is the harm of commencing the treatment of gastric affections by demulcents? Is any fear entertained that the patient will suddenly die of adynamia? Have not all the ancient physicians, since Hippocrates, preceded the use of evacuants by that of diluents? If these latter suffice, there will be no necessity of recurring to emetics and purgatives, and the cure will be accomplished in a pleasanter and surer manner. I say surer; for we shall see in the article on peritonitis, that a physician can never answer for the effect of emetics.

To return; Cornibere was latently undermined by two very obscure phlogoses, which without appearing to transcend the li-

* This condition is absolutely requisite; for those with weak minds exaggerate their sufferings, or disguise their real nature by explanations.

mits of acute diseases, had the insidious march of the chronic. Although this individual was of a rather obtuse sensibility, he nevertheless complained of two pains arising from two phlogosed spots, but they were not sufficiently active to energetically arouse the sympathies, until the disease was incurable. The debility of which he complained was the result of derangement in the nervous apparatus, the extremities of which were in a state of disorganization; and to remove this debility, it was not to stimulants that recourse should have been had, but to emollients, especially to acids, and to external means which might serve as revulsives.

Finally, the last conclusion to be drawn from the case of Cornibere is, that to avoid mistake in cases as obscure as his, the patient must be as continually studied as the disease. If this case does not render these truths sufficiently obvious to the Brunonian or humoral pathologist, let him finish this work, but let him divest himself at the same time, of all spirit of prejudice and adherence to system.

We will now present a gastritis, the duration of which was somewhat longer.

CASE VIII.—*Chronic gastritis with diarrhœa*.—Lallu, a conscript, lately enrolled in the eighty-fourth regiment, dark complexion, fleshy, pretty large chest, firm and strong constitution, entered the hospital of Udine, in December, 1806, having been transferred from another hospital, where he had lived for more than a month, and during all which time he had been harassed by a fixed pain in the epigastrium, with great constriction, invincible distaste for all food, nausea, and even vomiting. Diarrhœa was subsequently added to this. During the twelve days he was under my care, I observed the following:

Restless expression; sombre, livid, and earthy complexion; the conjunctivæ red. As regards the stomach, anorexia, vomiting of all the *ingesta*, sensations of uneasy and even painful constriction in the epigastric region. As respects the intestines, moderate but painful diarrhœa, excrements of an insupportable odour. As for habitude, third grade of marasmus, dirty skin, stercoral fœtor of the perspiration, feeble, contracted, and slow pulse, cutaneous heat below the natural standard, extreme debility, dispirited.

I treated him by the mucilages and oil of sweet almonds. The gastric symptoms were a little calmed, but he continued to grow feeble, and expired without a struggle about the forty-second day of the disease.

AUTOPSY.—*Head.* Engorgement, redness, universal hardness. *Thorax.* Lungs contracted, not filling the cavity; they were dry and of a deep red. *Heart* healthy. *Abdomen.* The stomach contracted in its right half, and dilated in the remainder, as in Guillaume. It was evident that it had been very large, and that this subject had been a great eater. The mucous membrane every where of a deep red, analogous to the colour of claret, black in the vicinity of the pylorus, and thickened and coriaceous especially in this spot. In the contracted portion it was every where dry, even in the folds. All the intestines red, their interior of the same shade of colour as the stomach, and containing liquid, mucous, and fetid matters, of an hepatic odour. The ramifications of the mesenteric vessels injected with blood of a vinous red, the serous membrane healthy. It should be observed that the deep red of the body was not the reddish-brown and venous tint of asphyxia or of adynamic fevers. I cannot do better than compare it to the colour which claret gives to linen steeped in it.

This gastritis, which was very well marked during life, was sufficiently chronic to cause marasmus in the patient. The phlogosis increased slowly; I do not know whether it provoked the general fever at the beginning, but during the whole time he was under my care, the pain was of a sedative nature. Far from exciting the contractility of the heart, it rather appeared to have in some degree destroyed it, to which no doubt the almost absolute want of nutrition greatly contributed. Examples which tend to prove that phlegmasiæ of flat and membranous organs may make astonishing progress without exciting the general circulation, begin to be numerous.* We have already seen that remedies which weaken the arterial force are of scarcely any advantage. It is an essentially capillary disease. Too happy to be enabled to apply the remedy on the diseased spot, we shall not have this

* All the phlegmasiæ are susceptible of several grades without fever; these are even more common than the febrile; but I was then a young practitioner, and vividly struck with every thing that was not conformable to the models of diseases, or the morbid entities I had learnt by heart from the classics.

resource in peritonitis. It will be judged, in the article on the treatment, in how great a degree art can advantageously influence the march of gastritis. In the mean time, the following example will point out the danger of faults in regimen.

CASE IX.—*Chronic gastritis with diarrhœa*.—Papillon, aged not more than twenty-two years, dark complexion, tall, thin, but pretty fleshy and of a firm tissue; slow, taciturn character, concentrated sensibility, as the melancholic are said to be, entered the hospital of Udine, the 18th of July, 1805, with a strongly marked distaste for all food, continual inclination to vomit; he always felt disposed *to throw up whatever he had taken*, and yet the diarrhœa never left him. He said that he had been sick for sixteen days only, and nevertheless he was already much emaciated; his face especially had fallen away, his complexion was sombre, his eyes sunken, his tongue humid and tolerably clean, the pulse not in the least febrile.

I did not deceive myself as to the character of this disease; thus, although he requested an emetic, I put him on the acidulated mucilaginous solution, and analogous juleps, and reduced him to gruel for his whole nourishment. At the end of three or four days the nausea and diarrhœa subsided, the appetite revived a little, and in four days more Papillon presented an unwrinkled face and a well marked appetite. The stools were reduced to two or three, and took place without pain. The danger appeared to me yet too near to dare to allow him solid or abundant food. I kept him therefore on soup, rice, and gruel.

All at once I found him complaining of pain in the stomach, nausea, vomiting, and an increase of diarrhœa with tenesmus. I examined his bed, and discovered that he had gorged himself with bread and boiled meat.

From this relapse to his death, which took place twelve days afterwards, he never ceased to vomit food and drinks. The diarrhœa tormented him in the most cruel manner. He fell into marasmus with surprising rapidity, and died without any one perceiving the moment, on the thirty-sixth day of his disease. The nature of his sufferings and the state of his pulse were precisely the same as in the subject of the preceding case.

AUTOPSY.—*Habitude*. Body slender; chest contracted on the sides, but tolerably large before and behind; considerable maras-

mus; the muscles, although very slender, were red and firm. No infiltration. The cellular tissue entirely effaced. All the sections made without flow of liquids. *Head* as in the preceding subject. *Thorax* the same, except that there was a small induration in the posterior portion of one of the lobes, every thing *pitchy* and of a vinous red. *Heart* small. *Abdomen*. The peritoneum *pitchy* and almost sticking to the fingers, the stomach having no cavity, all the intestines considerably contracted. The mucous membrane thickened, dry, of a vinous red, or like a decoction of log-wood. The mesenteric capillaries much injected, whilst the opening of the principal branches scarcely afforded any blood. The liver and spleen much diminished, same shade of colour as elsewhere. They were dry when cut. The gall bladder distended by black bile, resembling pitch; the pancreas healthy; the kidneys large, their centre, especially the mamillary portions, of a red approaching to black. The bladder so small that its cavity would scarcely contain a bean, its mucous membrane nearly in the state of that of the intestines. The penis black, half sphacelated.

Observations.—This enormous decay, this astonishing exsiccation, could have depended only on the want of the chylous absorption. It appeared that the general inflammation of this subject was of an alkaline nature; every thing had a strong pungent and ammoniacal smell, without putrid decomposition being sensible, or relaxation of the tissues.*

Let us then preserve this idea of the chemical and humoral physicians, who have described a particular state of the body which they termed *alkalescence*. The bodies of persons who die of thirst, must be very analogous to that of Papillon. There is no doubt found in them, phlogoses of the whole interior of the alimentary canal, of the kidneys, of the bladder, of all the secretory canals of the mucous fluids, and of the reservoirs which serve them as depots. The humours deprived of water, are suranimalized, and become a phlogistic poison, which disorganizes their own proper vessels. This fatal phlegmasia arises, and also makes great progress whilst the body is in a deplorable state of asthenia. But something similar takes place in the unfortunate individual in whom irritation of the stomach and intestines

* If diseases exist which merit the name of *putrid fevers*, this would be a *chronic putrid fever*.

prevents the absorption of fluids, so necessary to refresh the economy.

We are far from adopting that pernicious system which leads the too credulous practitioner to give stimulating liquors to these unhappy wretches, under the pretext that the irritation must be revived, the languor of which alone, they say, produces gastric phlogoses. Let us hasten to apply fresh and agreeably acidulated liquids to the parched membrane; this is the means we possess to extinguish the hidden fire which consumes it, and add to the blood a vehicle, by means of which it may pervade the most delicate vessels without offending them, and restore to the patient forces which were only suspended by the painful state of the most sensitive of his organs.

Does not the disease, and above all, the autopsy of Papillon also retrace to us the image of what is termed *the dry phthisis of the melancholic*? Is it not in this condition, if the cases given by Lorry be recollected, that the melancholic patients who die in a consumptive state, after having vomited their food for a long time, would be, and who, according to some authors, had no other organic alteration than a great dryness and extenuation of the viscera?

But, at the epoch when these observations were made, the vomiting without poison, and the diarrhoea, were termed nervous or saburral symptoms; a simple redness was not a phlogosis; in our days even, the Brunonians dare to record that the indurations of the pulmonary parenchyma, the injection and thickening of the membranes, the exudation with which they are found invested, are the mere effects of the last struggle, or of disorders posterior to death.

It is time to abandon all these systematic explanations, and to found our opinion on the comparison of facts. It must result from the cases I have collected in this work, that every organ, which after death, is found thicker, more consistent, and more injected than in the natural state, has experienced, in some degree, during life, the phenomenon which is termed inflammation; this at least must be deduced from the heat and pain which have been felt there, since the same name is given to these modifications when they take place under our eyes on the exterior of the body.

We have first studied the phlogosis of the mucous membrane

of the stomach, alone and primitive, we have afterwards seen it complicated with that of the intestines; but nevertheless so far the gastric symptoms have predominated. I will now report some cases which will show the effects of idiopathic intestinal inflammation alone, on the *ensemble* of the functions. At the same time it will be seen what changes gastric phlogosis occasions, when it subsequently complicates that of the intestines. In this manner the characters of each affection will be sufficiently prominent to elucidate the diagnosis of the too frequent combination of these two diseases.

II. SIMPLE PRIMITIVE ENTERITIS.

CASE X.—*Chronic inflammation of the mucous membrane of the intestines, extending to the stomach.*—Glaise, drummer to the ninth regiment of the line, aged twenty-four years, dark complexion, slender and dry habit, very quick and sensitive, contracted during the German campaign of 1806, a tertian fever, which he suffered under for two months, without leaving his corps, or using any remedies. Diarrhœa became added to it. Being at Palma Nuova, he entered the hospital, after remaining a month, whence he was sent to that of Udine, about the end of June, 1806. He had then been about four months indisposed.

On his arrival, Glaise was in a state of semi-marasmus, he had five or six evacuations by stool daily, with colic and much uneasiness. The pulse was not in the least febrile: I ordered him rice-water, aromatic and acidulated mucilaginous drinks, and farinaceous food. In a few days the diarrhœa was reduced to two or three evacuations without pain; the appetite, which at first was deficient, was restored, the skin became cleaner, and the complexion brighter. Glaise began to be convalescent. As he then assured me that there was no diarrhœa, I began gradually to augment his food, and in a month allowed him a three-quarter's allowance.

Suddenly there was a return of the diarrhœa and colics, and in three or four days a loss of the slight *embonpoint* he had recovered; rapid debility. I learnt that my intractable patient, urged by his hunger, had been in the habit of purchasing provisions; I restricted him to gruel, and again ordered the mu-

cilages and farinaceous articles made somewhat aromatic, which I had discontinued, thinking him cured. Vain attempt! in ten days he was reduced to a state of marasmus, although the discharge from the bowels was very moderate, and limited to two or three evacuations daily. I presumed that the disorganization of the mucous membrane was accomplished, and lost all hope. The appetite had been but momentarily suspended by the return of the diarrhœa, the pulse was also a little affected, but calm was soon restored. No other change than a slow diminution of the forces, until the forty-second day from his admission.

At this time, vomiting of his food, loss of appetite, continual nausea, anxiety, frequency of pulse, and heat of skin supervened. I was now aware that the phlogosis had reached the stomach. I gave acidulated and oleaginous drinks. The febrile action continued for eight or ten hours only. Glaise returned to his former asthenic state, but much more emaciated and oppressed, without appetite, sometimes having nausea, a slow and almost insensible pulse, and hardly an evacuation in the twenty-four hours.

During the twenty days he still survived, the marasmus made so astonishing a progress, that he became reduced to a mere skeleton. The skin, closely applied to the bones, was so tense that it could not be pinched up; the five or six last days it became covered with petechiæ and *vibices* of a wine-red colour; the conjunctivæ were also tinged of the same hue. During this latter period, Glaise lost the gaiety and vivacity he had always preserved, when not affected with the diarrhœa. He became taciturn and melancholy like Lallu and Papillon. Two or three days before his death, his reason was disturbed; he testified appetite, and eat pretty heartily, till the 22d of Sept. when he expired as peaceably as a decrepid old man who finishes a long career. The total duration of his disease was six months, of which two and a half were passed under my eyes.

AUROSRY.—*Habitude.* The body as rigid as a natural skeleton, the muscles reduced to very small fleshy bands, of a deep red and claret colour, destitute of moisture and *gluey*. *Head.* Flaccidity and redness. *Thorax.* The same. The lungs almost obliterated by their retraction. *Abdomen.* The whole of the alimentary canal so contracted, that the mucous membrane was almost every where in contact. In the stomach this membrane was red, thickened, and covered with a grayish exudation in the

vicinity of the pylorus; every where else to the anus it was dry, and of the colour of a decoction of logwood; hence there was scarcely any thing in the intestines. In short, the body was in the same state as that of Papillon, if we except the glairy coat which lined the pyloric orifice.

Observations.—This case already points out the symptoms which depend on intestinal phlogosis, from those produced by gastritis; but as the irritation of the mucous membrane of the intestines was at first very slight, as it was only prolonged by the want of treatment or dietetic errors, it did not occasion great disorder in the functions; it altered them gradually; it rather induced death by extinguishing the forces by want of nutrition, than by the immediate effect of pain and disorganization; hence medicine acted with great success at first. Other cases, which I shall subsequently cite in speaking of the treatment, lead me to believe that if Glaise had been less a slave to his appetite, he would have perfectly recovered.

I will now give the account of a case which presented the same complication, but in which the inflammation of the lining membrane of the colon was much more intense from the commencement, which caused a striking difference in its progress and duration.

CASE XI.—*Chronic inflammation of the mucous membrane of the intestines, extending to that of the stomach, with cerebral irritation.*—Defoss, aged twenty-two years, native of Belgium, light chestnut hair, medium height, rounded form, body tolerably muscular and fat, flabby flesh, white skin, complexion somewhat high, moderate sensibility, entered the hospital of Udine the 9th of November, 1806. At first view he did not appear ill, but he complained of having lost the sight of his right eye, which, however, did not appear different from the other; his pulse was frequent and quick without heat of skin, appetite good, and the patient complained of no local pain or disorder in his evacuations. He nevertheless said that he had been unwell for twenty-four days.

I sought for the cause of the febrile action, which I attributed to the suffering of an organ. For several days I perceived nothing; I then thought it might be in the head, and applied revul-

sives to the nape of the neck and lower extremities, when I discovered that he had two or three stools in the twenty-four hours. I promptly adopted the anti-diarrhœtic plan, which will be spoken of hereafter, but the evil was done.

After twelve or thirteen days in this ambiguous state, the patient was seized with a violent dysentery, attended with very bloody stools. Some days after this, increase of the diarrhœa, the appetite disappeared and never returned. The other symptoms of gastric phlegmasia, as nausea, feeling of fulness, &c. appeared. His colics continued, the pulse and heat gradually subsided, the patient was several days in an asthenic apyrexia, with infiltration, involuntary evacuations, and motionless, pale, and fetid, he expired on the fifty-fifth day of his disease, without agony.

Autopsy.—Habitude. Semi-marasmus, slight infiltration. *Head.* Nothing remarkable except a certain quantity of limpid serosity in the left lateral ventricle. There was sufficient to keep the sides at a marked distance apart. *Thorax.* Every thing natural. *Abdomen.* The stomach was not completely contracted, its mucous membrane every where rosaceous, but in the vicinity of the pylorus it was thick, red, and glairy to a great degree. Some red points in the mucous membrane of the small intestines; that of the colon black, sphacelated, and ulcerated, from the cœcum to the termination of the canal. The liver, spleen, and mesenteric glands perfectly healthy.

Observations.—It is difficult to account for the febrile action which preceded the diarrhœa, in the patient whose case has just been read. I was much embarrassed in finding a man with a frequent pulse, without heat of skin, and complaining only of the blindness of an eye, which did not appear different from the other. In my uncertainty I allowed him what food he desired, and which at first did not seem to disagree with him; I would now be more rigid. In fact, when the pulse is more frequent and quicker than common, and the heart irritated either idiopathically or sympathetically, it is always injurious to allow solid food, which occasions labour to the stomach, and still more accelerates the play of the functions.

I have several times met with these obscure cases of frequency without any symptom of common continued fever; I have often observed that they terminated by a localization which rapidly

destroyed one of the principal apparatus.* This kind of morbid affection does not appear to me to have been treated of by any author. As for myself, although I have not sufficient facts to speak of it *ex professo*, I will seize the opportunity of detailing what I have seen.

Having found the pulse agitated, quick, and sometimes full in soldiers who complained of nothing, except that they were not strong enough to continue their duty, and also in certain convalescents; observing at the same time that digestion was properly performed, that there was neither cough nor local pain, I asked myself whence this kind of fever could arise; I interrogated, examined, studied my patients, and the following is the result of what I have gathered to the present time.

1st. Convalescents from continued fevers and acute phlegmasiæ, often have the pulse frequent for some time. This depends most generally on the labour of digestion being painful to the economy, but then the frequency diminishes in proportion to the restoration of strength. It suffices to be attentive to the regimen, and not to allow too much alcoholic drink. When the frequency does not diminish, and the strength does not increase, it may be suspected that a focus of latent inflammation exists. It may be discovered by permitting an excess, which generally changes the frequency into a real fever, and developes the pain of the irritated part.†

2d. Many convalescents from intermittent fevers, have experienced the frequency for a long time, without local symptoms. The majority have finished by a phlogosis of the stomach and intestines.‡ It is to be remarked, that they had taken much bark.§ In two others I recognised a slight degree of aneurism, verified

* Oftentimes what appeared to me as the localization of a general action, was only the same irritation which had kept up the fever, and merely became more sensible as it progressed. But how is this to be distinguished previously to an acquaintance with the physiological nature of fevers? At other times it was a secondary phlegmasia that attracted all my attention, because I was ignorant of the characters of the primary, of that which hitherto had kept up the febrile action, which I regarded as having its seat equally in all parts of the body.

† The pain does not always appear, but we now know that the seat of irritation is discoverable by means of the sympathies.

‡ They had it from the first.

§ An additional reason for believing it.

by an examination after their admission. In a third, infiltration supervened, and the death permitted me to observe an inflammation of the pericardium.

3d. A soldier convalescent from a tolerably moderate pulmonary catarrh, after having been in this extraordinary state of excitation for more than a month, with frequent returns of epistaxis, was suddenly attacked with complete blindness, and an inflammation of the bladder, (lining membrane.*) The lateral ventricles of the brain were much disturbed by serosity.

4th. Many persons in whom this frequency and force of the pulse and great capillary injection were habitual, have been found to have aneurism of the heart. I have often met with it, in company with M. Trastour, surgeon of the eighty-fourth regiment, in the medical examinations of his corps.†

5th. Finally, some patients are found thus affected, and without symptoms of aneurism, whom I have cured by a muco-saccharine, vegetable, and farinaceous regimen, given with caution, and by emollient and acidulated drinks, and I have been but little surprised at it; for, when the frequency cannot be attributed to a vice of the heart, and there is no hemorrhagic disposition, or evident tendency towards the brain, an irritation of the gastric passages may be suspected. But, in this case, a purgative or emetic is sufficient to cause a violent and sudden explosion of the phlogosis on the organ. I have seen an example of this, which I will not mention, as it was not treated by myself.

This kind of fever may last a very long time; it then merits the name of *hectic fever*, and I do not see that we can give it a better designation than that I have adopted, *hectic from pain*. It may depend on a moral cause. It necessarily announces an irritation obstinately fixed on some sensitive part of the organism. If the sensorium is not apprised of the seat of this irritation, it may be attributed either to habit, or a kind of stupidity in the patient, who bestows but little attention to his proper sensations.

* The case has been inserted in the *Bulletin des Sciences Medicales*, published by the Medical Society of Emulation, May, 1808.

† These frequencies of the pulse are not febrile, at least they do not depend on a focus of irritation foreign to the heart, but on the irritation of the heart itself.

In this case, the effect of food and medicine must be observed, and the attention of the patient directed to the suspected organ.* Be this as it may, this singular fever forces us to admit that the viscera may suffer an alteration in their function, and even in their organization, of sufficient intensity to influence the heart and derange the harmony, without the sensitive centres of sensation having cognizance of a local pain.

In all these cases, the first thing to do is to spare the sensitive membrane of the gastric passages from the action of irritating and putrescible substances. All stimulants are injurious when the circulatory action is strongly excited. It is erroneous to suppose that, because food has been refused to a patient who is not exhausted, for some days, that he will fall into a state of incurable debility.

We shall recur to this proposition, and will give evidence of its truth when speaking of the treatment of gastric phlogoses.

The case we here cite belongs wholly to an inflammatory diathesis, which will soon be spoken of in a more detailed manner.

I have but one other reflexion to make on Defoss; this is, that there is reason to believe that the compression exercised on the sides of the left lateral ventricle had some connexion with the blindness of the right eye. When in a healthy man, an augmentation of exhalation or secretion takes place in any part of the body, it may be admitted that the part which is the seat of it is over-excited. It may be, therefore, that the febrile action was at the commencement only the result of a determination towards the head. I thought so, since I had recourse to blisters. However, there was certainly in the second place a determination towards the mucous membrane of the colon. But to return to my first reasoning; there is no better plan of preventing this tendency, or to diminish it, than to administer nothing but emollients of such a nature as to leave but little residue on the irritated surface.

The great importance of this precept will be seen by the following case, where the pain of the mucous membrane of the large intestines was the sole cause of the general irritation.

* For all questions of semiology see the "Traité des Inflammations lentes," by Pujol de Castres, and the remarks I have made on that work in the *Examination of Medical Doctrines*.

CASE XII.—*Acute inflammation of the mucous membrane of the colon, become chronic from repeated errors in regimen.*—Courtois, a native of Paris, aged from twenty-two to twenty-three years, black hair, medium height, tolerably muscular and robust, sanguineous system active and developed, vivid sensibility, entered the hospital of Udine, the 3d of June, 1806, about the fourteenth day of his disease. He was attacked with a violent dysentery, characterized by a continual tenesmus and bloody dejections. A very active fever was joined to it, and he had a marked distaste for any food.—I immediately put him on the use of emollients, and gruel was his only nourishment.

In fifteen or twenty days the irritation was entirely calmed; the stools did not exceed two or three in the twenty-four hours; they took place without pain, and the appetite was good. Taught by experience, that the farinaceous and muco-saccharine regimen could alone remove the intestinal phlogosis, I kept him on rice, broth, and gruel. This intractable patient procured food in secret, and among the rest, meat, with which he satiated himself.—Return of the first symptoms with an alarming violence. The anxiety almost amounted to despair. This state alarmed him, added to which, the appetite was lost. Courtois repented, and became docile.

Amelioration soon took place; in a few days he found himself in as comfortable a state as before. But having committed the same fault, he experienced another relapse more alarming than the preceding, as blood passed in abundance with the excrements.

After this exasperation, which occurred about the sixty-third day, nothing procured him any relief. Mucilaginous and farinaceous articles, anodynes, wine, and other tonics, which I was obliged to allow him, to keep up his failing strength, did not prevent a continual febrile action, with a quick, small, and contracted pulse. Finally, the reaction ceased, there was fluctuation of the abdomen, anasarca was developed, and Courtois expired the eighty-third day of his disease. I learnt after his death that since his last relapse he had never ceased satisfying his appetite with meat, and that he had eaten a large piece the very day of his death.

AUTOPSY.—*Habitude.* Œdema moderate, muscles pale, in isolated fasciculi, and as if washed. *Head.* Softening, serosity

in the occipital fossæ. *Thorax.* Lungs tumid, engorged, pouring out much bloody serum on being cut. *Heart* small and healthy. *Abdomen.* Abundance of gelatinous whitish serosity in the peritoneum, whose tissue was however healthy. The mesenteric glands large; some of them scirrhus and even tubercular, especially in the vicinity of the cœcum. The epiploic appendages of the colon containing lymph instead of fat. The stomach and small intestines dilated and all their membranes white. No trace of phlogosis was perceptible. The mucous membrane began to assume a red appearance in the cœcum only; from this sac to the anus it was tumid, fungous, tubercular, and destroyed to a considerable extent in a multitude of places. Its colour was red, bluish, and even black on approaching the rectum, and the odour which exhaled from it announced gangrene. The muscular coat of the stomach of a natural colour, but appeared to be thickened, and the tissue which unites the three tunics a little tumid and as if infiltrated.

Observations.—Here are two individuals, Defoss and Courtois, of a flabby, lymphatico-sanguine texture; well! in both, the intestinal phlogosis was attended with tumidity, development and ulceration of the mucous glands. In both, the agitation of the heart was very great, both died in a dropsical state. The first having been attacked with the gastric phlogosis during the last days only of his life, did not lose his appetite until this time, whilst the second preserved it until death.

These two patients never experienced indigestion; the last meal of Courtois had entirely disappeared from his stomach. Nevertheless, what purpose did the chyle which was absorbed serve, and which the state of their forces did not allow to be assimilated? To furnish serosity to the serous and cellular cavities, to uselessly exhaust the life of the principal laboratories of assimilation, and to engorge the lymphatic system. What effects were produced by the residue which could not penetrate beyond the gastric passages? It degenerated into fetid excrements which irritated an inflamed surface, and hastened its disorganization, and thus produced a continual pain, which harassed the functions and hastened the exhaustion of the nervous force.

I will pass over in silence upwards of twenty patients with diarrhœa, affected in the same manner as Courtois and as intractable, as they perished in the same way, and the disorders

were similar. This subject may serve as a type of febrile dysenteries, without complication, whose diagnosis is perfectly simple.

I will now detail a case which will present the gastro-intestinal phlogosis in another febrile shade. From the complication which occurred, such symptoms among the general troubles as belonged to the disorders of the different apparatus will be distinguished. I believe these objects of comparison necessary to the history of the phlogosis of the alimentary canal.

CASE XIII.—*Chronic inflammation of the mucous membrane of the intestines, with epistaxis and phlogosis of the parenchyma of the lungs.*—Lallemand, aged twenty-six years, medium height, thorax well-formed, muscles powerful and tolerably large, hair and complexion dark, vivid sensibility, robust health, was in the twenty-fourth day of a violent diarrhœa, when he entered the hospital of Udine, about the end of August, 1806. He had twelve to fifteen evacuations from the bowels in the twenty-four hours, with tenesmus and colics, and his dejections were bloody.

I treated him by demulcents and mucilages according to the plan I have pointed out. The fifteen first days after his admission the pulse was always a little frequent and hard, and in the evening there was a febrile heat. The appetite always kept up. During the ten succeeding days there was no diarrhœa or apparent disorder in the circulation. At the end of twenty-five days he appeared cured; he had but one evacuation in the twenty-four hours, and regained his strength. I thought I might permit him a three-quarter's allowance, and he eat it for nine or ten days, apparently without inconvenience.

The 2d of October, the sixtieth day, he complained of having experienced a chill in the evening, and told me that he had remarked blood in an evacuation, the only one he had had during the day. The pulse did not appear to me to be affected, but the complexion was not as healthy. I immediately reduced his nourishment.

The 4th, a complete paroxysm of intermittent fever.

The 5th, copious hæmorrhage from the nose, which commenced when he stooped to pick up something from the ground; the skin covered with tolerably large petechiæ, which he said were flea bites. Fleas might in fact have given rise to them, but these

spots did not disappear.—Sulphuric lemonade, a rubefacient to the nape of the neck; increase of the diarrhœa, which was always bloody. Great appetite.

10th. Return of the epistaxis. Use of the tampon, pediluvium, rice-water with sulphuric acid.

11th. The sixty-eighth day, continuation of the hæmorrhage, elevation and frequency of the pulse without heat.—Use of acids, aluminous pills, pediluvæ, and blisters. The hæmorrhage ceased; continued frequency of pulse, emaciation, alteration of features. Appetite.

18th. Calm appeared to be reëstablished, but the frequency of pulse continued.

19th. Frequency much augmented; consistence and volume of pulse, notwithstanding the debility; slight cough; continual oozing of blood; necessity for constant use of the tampon. Diarrhœa more copious; fœtor of the breath and transpiration; habitual and unconquerable insomnia until death.

22d. Frequency and hardness of the pulse more marked; heat of skin; continual and dry cough; persistence of the oozing of blood, which filled the tampon, putrefied and augmented the fœtor of the atmosphere surrounding the patient.—Use of nitrated emulsions, revulsives to the exterior, aluminous pills; but the stomach refused them.

25th. Heat moderate, but it varied. Suspension of the hæmorrhage. Bloody stools as before, to the number of seven or eight.—Astringent, vinous, and aromatic drinks. No opium; it augmented the hæmorrhage.

Nov. 3d. The hæmorrhage returned several times. Great alteration of the physiognomy; increase of the marasmus; diminution of the intellectual force.

10th. Loss of spirits; pulse very frequent; heat great; a menace of hæmorrhage at each fit of coughing; the face red; the pulmonary parenchyma appeared much phlogosed; rapid decomposition. Prodigious appetite.

11th. Ninety-seventh day, sinking of the pulse; still greater loss of spirits; partial deafness; hæmorrhage; diarrhœa.

14th. The stools almost of pure blood; the petechiæ enormous and livid.

16th. Insupportable fœtor of the breath and of the black and muco-sanguinolent sputa; contraction of the pulse.

17th. Tumidity of the face.

19th. Disappearance of the reäction; coldness; death; this took place on the hundred and sixth day from the commencement of the disease.

AUTOPSY.—*Habitude.* Body in a state of semi-marasmus; the muscles still had a little volume. No effusion in the cellular tissue. *Head.* Cerebral substance white, but little serosity in the ventricles, rather more in the cerebral fossæ. *Thorax.* Right lung free, indurated to a hepatic consistence in more than a third of its bulk, posteriorly and inferiorly; the rest of it engorged and black. Left lung fixed posteriorly by old adhesions, engorged, but not indurated. *Heart* healthy. *Abdomen.* The serous membrane in a good state. The mucous membrane of the stomach of a clear red, swelled, lined with mucus, and having small black points, which appeared to be very slight eschars. Notwithstanding this condition, the stomach was not in the least contracted. It was even tolerably large. In the small intestines the mucous membrane was every where healthy. In all the large intestines, we found it thickened, tumid, black, and exhaling an odour of gangrene, but without ulceration. Small points of a deeper colour than the rest, placed on a little eminence, were perceptible; they appeared to me to be mucous lacunæ. All the other viscera in a very good state. The paleness of this body was not very great. It was less fetid than that of an adynamic fever patient. The fætor was only in the excretions produced during life. The nasal fossæ were only a little less pale than in other subjects.

Observations.—Notwithstanding the care I took to obtain information on the conduct of Lallemand during his residence in the hospital, I could not discover that he swerved from my prescriptions. Now how am I to explain his relapse? Is it probable that if, instead of permitting him to eat a three-quarter's allowance, I had kept him on a half or a quarter, without ever allowing him meat, that his cure would have been perfected? There are only probabilities in this view of the subject, but there is nothing more certain in that opposed to it, and which would consist in regarding the inflammation as not cured, but rather as palliated and only waiting for a slight impulse to explode with renewed violence.

If this latter explanation be admitted, it must at the same time

be allowed, that the inflammation had been considerably diminished, since the mucous surface supported stimuli which it could not have borne the preceding month; but it is enough for us to attest that it advanced towards a cure. In fact, the first change which takes place in an inflamed surface in a healing state, is to become less sensible, and to invite a less quantity of fluids. It is therefore to be presumed that Lallemand was on the eve of recovery, and that he rather perished from a relapse, with a renewal of the disease, than from the hidden progress of the first diarrhœa.

I have also asked myself if this transient calm, which gave me so much hope, did not depend on the membrane, after forty or fifty days of suffering, being disorganized and insensible. This would be the best mode of accounting for the amelioration of symptoms, if the cure and relapse be denied. But what a slight foundation there is for this explanation! If the mucous membrane had been sphacelated, Lallemand would doubtless have ceased to suffer, but the diarrhœa would not have left him, and his strength and physiognomy would never have been restored, so as to simulate a perfect cure, for more than fifteen days. I have often met with this sphacelus, and have never seen it coëxist with so satisfactory a state as that in which Lallemand was.

Another no less powerful reason also militates against the idea of sphacelus; for, as the mucous membrane again became sensitive and hæmorrhagic, the amelioration under consideration could not have depended on the death of that tissue, or on an induration capable of entirely depriving it of its sensibility.

It is therefore clear that Lallemand was nearly cured, and that he experienced a relapse. When at the same time I recall to mind other cases of dysentery, where my treatment has not been ineffectual, I am the more confirmed in this opinion; but I postpone the demonstration of this to the article on the treatment. Let us at present analyze the symptoms which occurred after the relapse.

If the febrile action of the first attack be compared with that of the second, a great difference will be remarked. As to the first, although Lallemand had fifteen evacuations per diem on his admission, the circulatory action did not reach such a degree of acceleration as to occasion heat of skin, except during the even-

ing exacerbation; because then the irritation only existed in the mucous membrane of the intestines.

In the relapse it did not at first appear more violent; nevertheless, the patient was stronger and better nourished than at the time of his admission. But a few days afterwards, in proportion to the increased activity of the hæmorrhage, the pulse began to grow quicker, because the phlogistic disposition had extended to the mucous membrane of the nasal fossæ, and perhaps to the whole cerebral organ.

Finally, at the time when the cough manifested itself, it was evident that heat of skin was added to the frequency of pulse, and the decomposition of the body began to appear. Who can here mistake a phlogosis extending over the principal mucous surfaces? It does not appertain to a pure and simple inflammation of the internal membrane of the colon, to cause a large and frequent pulse, with great heat of skin, in an already exhausted subject; at least it is a combination I have never observed. Hence I predicted an induration of the pulmonary parenchyma, which was fully verified on dissection.

But why this unconquerable tendency to hæmorrhages? We frequently see signs of inflammation coincide with loss of blood. This is admitted as respects hæmorrhages with excess of vigour, but no one could perceive them in those which occurred in debilitated subjects; it however appears to me that they persisted in Lallemand until the total exhaustion of the forces of life. In fact, if the injection of the part which furnished the sanguine evacuation, and the general acceleration of the movement of the fluids, are attributes of inflammation, where have they been better united than in this patient? Did they not commence by epistaxis? Did they not obstinately persist, even when he was rapidly falling into a state of marasmus? The same state of things always was operating on him. What is termed *passive hæmorrhage*, therefore, took place in this case, by the laws which produce the sanguine excretion in active hæmorrhages. This denomination of active and passive, equally applicable to inflammations, cannot, therefore, serve to designate any thing but the state of strength or debility of the individual. It is hence unphysiological to say that the latter depends on the want of resistance in the vascular extremities against the *vis a tergo*, when

the other is attributed to the augmented activity of the same capillaries. Rigorously speaking, is it the want of resistance of the gastro-intestinal mucous membrane, or of that of the lungs, which keeps up chronic dysenteries, catarrhs, and phthises? Is it not rather the presence of a stimulus, or the irritating impression it has left in the diseased tissue? Do not these phlegmasiæ continue, whilst the subject loses his strength by the same laws which had given rise to them, and which keeps them up when he was still full of blood and vital forces?

These reflexions are useful to my subject, as will be seen in the theory of the treatment. If they do not explain to us why a certain local action of the capillaries is rather hæmorrhagic than suppurative, they will at least arrest the reflexions of thinkers on these distinctions of hæmorrhages into active and passive, distinctions which have hitherto been too much respected.*

The fetor of the excretions, so remarkable in our patient, recalls to mind what I said on those of the consumptive, in the article on the anti-putrid treatment of the last stage. In chronic affections of the breast, the fetor appeared as only the result of a purulent absorption; in simple gastric phlogoses it does not present itself; in those of the surface on which the putrid residue of our food continually rests, it must at first be considered as the product of a real introduction of putrid particles into the channels of the circulation, by means of absorption by the intestinal lymphatics; protracted diarrhœa is never seen without fetor of the transpiration, and this fetor is the more marked as the disease advances, or as the food is the less digested, and sooner enters into a putrid decomposition. It is generally a very bad sign, and this does not appear strange to us, since we know that the miasmata arising from putrefaction powerfully tends to extinguish animal life.

This is not sufficient to explain the case of Lallemand; among the very numerous dysenteric patients I have followed to their death, no one exhaled so empoisoned an atmosphere, no one also

* Notwithstanding the clearness of this dissertation, passive hæmorrhages and inflammations have prospered in France up to the epoch when I demonstrated that the classification which admits them is absurd throughout. At the present day, the terms active and passive are relinquished by those who read and think, but there are some who do not read, and others who feign never to have read.

was consumed by so rapid a hectic. Could the vivacity of the circulation have been a secondary and coöperating cause of the putridity of the *excreta*? I have observed a certain number of patients in whom the hectic fever was maintained in a very intense degree of activity for a long time, that is, for about a month and a half, which is a long period for a violent hectic; it did not depend on a purulent absorption, it belonged to those which are kept up by the continual stimulation of a sensitive and very influential organ in the economy. Well! at the end of a certain time, all these patients became fetid, and fetid in all their evacuations, all likewise perished, and their bodies presented marks of corruption. These cases will be detailed when I shall have the opportunity. I have always concluded from this, with the ancients, that an accelerated action of our humours too long maintained in opposing a proper assimilation, and in exhausting the vital power, finished by disposing our solids and fluids to very promptly obey the laws of inorganic chemistry.

The following case will present a complicated febrile dysentery, like the preceding, but in which the sanguine and nervous systems were not disturbed in the same manner.

CASE XIV.—*Chronic dysentery, rendered febrile by accidental causes, and complicated with a pleuro-peripneumonic phlogosis.*—Judé, aged twenty-three years, dark complexion, pale, tall, slender, and very sensitive, entered the hospital of Udine on the 30th of March, 1806. He stated that he had at first, for twenty days, laboured under a diarrhœa which was attended with but little pain, and which had been treated at the hospital of Trieste. He was dismissed cured. But two days afterwards the diarrhœa recommenced, and accompanied with violent and continual pain and tenesmus. Having been obliged to reënter the hospital he had just left, he was in a few days sent to that of Udine, on about the thirty-fifth day of his disease.

I found him at first with a very high fever, contracted, small, and rapid pulse, elongation of the features, indicative of anxiety. He complained of a burning heat internally, an ardent thirst, and acute and continued pain in the abdomen; he coughed often, and expectorated purely mucous sputa. He pointed out no painful spot in the thorax. He went to stool every instant, with deep complaints and groans; the slightest touch to his abdomen was

insupportable, which was besides much depressed and drawn towards the spine. He was already much emaciated and still fell away very rapidly.

It was not difficult for me to recognise a chronic inflammation of the intestinal mucous membrane, exasperated and renewed during the absence of the patient from the hospital, and by his transportation to another. The cough even was not complicated with the dysentery until after the relapse. I could not judge of the disorder of the thorax, on account of the predominance of the abdominal symptoms, but it appeared to me that it should be considerable in a very feeble, sensitive subject, who coughed often, whose skin was burning, and who presented a tinge of redness on the cheeks. I employed sweetened mucilages and farinaceous food. In a short time the excess of the pain, and the tendency to lipothymia, which was consequent on it, obliged me to give opium and some alcoholic cordials.

He still survived under my care for seven days, during which the symptoms never ceased increasing. The fits of coughing, now become continual, rendered the pain in the abdomen intolerable, and forced this miserable man to perpetually void his excrements in his bed. When he did not vomit what he swallowed, he always passed it a few moments afterwards by stool. Infection exhaled from his body by all the pores. He passed from this terrible state into that of almost sudden death, without having become much emaciated.

AUTOPSY.—*Habitude.* The fat all removed, but the muscles still red and but little diminished. *Thorax.* Adhesions by solid productions on one side, and soft, half gelatinous ones, still porous, and filled by bloody lymph, on the other. The pleuræ, especially that of the last mentioned side, red and thickened. The left lung which corresponded to this pleura, covered with gelatine,* had a large patch of induration, and was much engorged. *Heart* a little dilated and rounded; its envelope filled with a lemon-coloured serosity. *Abdomen.* No effusion; every thing at first sight appeared dry and of a wine-red colour, (*ut supra.*) This colour arose from the mucous membrane, which was thickened, and deeply tinged of the colour of logwood, from the cardiac orifice of the stomach to the termination of the rectum. In

* Perhaps rather with albumen.

approaching this intestine it was found black, and its rugæ so tumefied that they were as large as a nut, and appeared to obliterate the colon. It was covered in several isolated spots by a very adherent and firm mucous exudation. The liver and spleen appeared to me red, engorged, and voluminous.

Observations.—At first, the phlogosis existed only in the mucous membrane; afterwards the superadded action of cold established it in the pulmonary parenchyma and on the surface of the pleura, which was found coated with a gelatinous substance, for the other had been cured of a similar disease a long time since. From the moment of this complication, the pulse was accelerated, and the heat became ardent. Finally, the progress of the intestinal phlogosis towards the stomach gave rise to anxiety and vomiting, which allies this case to the first I have cited.

No hæmorrhage was seen here. Although the reason cannot be precisely given, it is nevertheless easy to see that Judé had not as predominant a sanguine apparatus as Lallemand, whilst his nervous system was much more active and sensitive. For this reason also he suffered more.

If the same disease, in the same organ, presents so much variety in different subjects, the cause can only be found in the difference of constitutions. This is a physiological truth, which perhaps is not sufficiently appreciated. All the subjects that have been noticed since we began to speak of gastro-intestinal phlegmasiæ, suffered from violent pain; we shall soon find others, whose organism was destroyed by a fearful dissolution, almost without suffering, and we shall always see that the temperament was in unison with the symptoms. Nevertheless, the organic lesions were always the same, except in some minor points. The sanguine had more fever and hæmorrhage, the phlegmatic were consumed by a kind of apyrexia torpor, and when they were flabby or exhausted by excesses, they became infiltrated. The nervous suffered most, but languished the shortest time. As to Judé, it is evident that he died of pain before he had time to pass into a state of marasmus or dropsy.

After what I said respecting the case of Lallemand, there are few reflexions to make on the treatment, except that the relapse of this patient, after his dismissal from the hospital of Trieste, furnishes a new proof of the pernicious effects of stimulants in these diseases. Hence the intestinal mucous membrane remains very sen-

sible for a long time after the cure of diarrhœas. What could I do when this man arrived with a double phlegmasia which had already disorganized his viscera?

I have collected a similar example in an individual named Macé, of a slender make and very active, nervous apparatus, who died the thirteenth day of a dysentery as painful as that just detailed. He had at the same time a dry and continual cough, of much longer standing than the diarrhœa; he was not more emaciated than Judé; the mucous membrane of the colon was absolutely in the same state as in that subject; the lungs equally carnified, had moreover some dry tubercles.

It appears to me useless to further multiply examples of violent dysenteries, which became promptly fatal. All that I have met with are similar to the preceding; they all had the common attribute of causing the death of the patients by excessive pain, before they fell into marasmus. But I distinguished two varieties of them as regards the epoch of the pain and the duration of the disease: 1st. The one violent and painful from the commencement, like that of Macé, and becoming fatal in a short time; these are not chronic diseases; this is the *dysentery* of authors, which may appear in an epidemic form, with or without complication with *typhus*.* 2d. The others do not assume the acute character until they have been chronic and indolent for a long time, as has been seen in the case of Judé; these last are incurable. As to the acute, the success depends on the sage and prompt administration of appropriate remedies, the docility of the patients, the perseverance of the physician in adhering to this treatment; for if stimulants are allowed too soon to harass the colon, the phlogosis is kept up, in a slight degree, it is true, but sufficient to exhaust the forces. Another variety results, composed of the acute, febrile, and painful state *primarily*, and the chronic, apyrexia, and not painful state *consecutively*.

As tonics are recommended by the best authors in this kind of chronic diarrhœa, because they attribute it solely to relaxation and debility, I will detail a few cases, by which it will be seen how few advantages I have derived from this plan. From other cases, which I reserve for the article on the treatment, I will endea-

* That is to say, acute gastro-enteritis.

vour to ascertain in what proportions tonics may be united to the mucilaginous and farinaceous articles which form the basis of the treatment.

CASE XV.—*Chronic dysentery, which was febrile and violent at its commencement.*—Boucher, a hussar in the sixth regiment, medium height, regular form, tolerably muscular, with chestnut hair, and a white skin, after having suffered for some weeks with vague rheumatic pains, without fever, was exposed during the night to a draught of cold air, through a broken window, and contracted a very severe cold. Some days afterwards he was also seized with a dysentery, accompanied with violent colics, and a very harassing tenesmus. Such was his state on the 28th of April, 1806, in the hospital of Udine, where he had already been for upwards of twenty days; he caused me much uneasiness.—I immediately employed baths, rubefacients, vesicatories, sudorifics, and alcoholic frictions, to recal the pain to the external parts. Those of the viscera were augmented by this plan.* I was obliged to confine myself to demulcents.† The fits of coughing were long and violent, and the colics terrible.

Some days of this treatment having sufficed to calm this storm, I believed that it was allowable to add tonics to the mucilaginous substances. I chose wine and the tincture of opium.—Cough, diarrhœa with colics, but no fever.

The 3d of May I wished to see the effect of tonics applied immediately. A decoction of bark with gum was administered as an injection. But little change.—I allowed him to eat nearly what he pleased, though but little meat. The injection was repeated every two or three days. Diminution of the stools. He had two or three only in the twenty-four hours, but several times experienced rather severe colics, which preceded stools invariably bloody. The strength did not appear to increase. The severity of these pains caused me to relinquish

* I have already said that a revulsion of violent phlegmasiæ is rarely obtained before bleeding, the external irritation then retreating to the viscera; but I shall return to this point, for there are yet a host of physicians who prematurely try the revulsive plan.

† It was a case for the employment of leeches to the abdomen, and especially to the anus.

the astringent injections, which I replaced by emollients. But I did not cease adding aromatics to his drinks, or to make him take some decoctions slightly charged with tannin.

The result of this Brunonian treatment was, that towards the end of May, there was an exasperation of the diarrhœa, debility and discouragement, with cold skin. Having acquired by this experiment, the conviction that a phlogosed mucous membrane does not require to be highly stimulated, I reduced him to gruel for his sole nourishment, and only allowed him decoctions of vegetable fecula, rice-water, &c.; mucilaginous drinks made slightly stimulating with distilled waters and a little opium. In three or four days he felt himself well, and went but twice a day to the close stool.

In June, I again made a new trial of astringent tonics, with a decoction of oak bark with gum, well sweetened, which I prescribed in small quantities as a drink. The stools increased to six or seven. I resumed the demulcent treatment, his stools were reduced to three or four, but from time to time they were bloody, and preceded by colics.

From a perseverance in the emollient treatment, made slightly stimulant, and a few doses of wine, Boucher regained strength, colour, and even flesh, always having three, four, or six evacuations, but without pain. As his appetite incommoded him, I granted him three-quarter's allowance, with meat, but only at the morning distribution. He remained in the hospital until the 23d of August, without change. He could be suspected of being unwell, only from a slight paleness, and from having five or six stools daily, without pain. He insisted, moreover, that he always felt weak.

The continuance of this state of languor convinced me that he was unfit for military duty. I designed that he should be discharged. The day he left the hospital, a glass of sweetened wine occasioned him a violent colic with diarrhœa, of which, however, he recovered the next day.

He still passed some days in town, being cautious in his diet, without experiencing more inconvenience than in the hospital. Finally, having set out with his discharge, he died at about four days journey from Udine, of an unexpected relapse of colic and bloody discharges, after about six months illness.

Observations.—Although the body was not examined, it is

evident to me that the death was owing to the phlogosis of the mucous membrane of the colon. My experience on this point is too great for me to doubt it a moment. But let us speak of the treatment.

At the time I endeavoured to check, (as has been detailed,) the diarrhœa of this hussar by astringents, tonics, and wine, I made the same experiment on ten or a dozen other patients, who were in the same situation. I can truly assert, that I never obtained any success by this plan. I tried it in the first instance, although contrary to reason, because it was recommended by the most respectable French authors; because the Brunonians who were so numerous in the climate in which I then was, recognise it as the only admissible method. But as soon as I found myself sufficiently rich in facts to judge that it was not only useless, but also injurious, I abandoned it, and it is only subsequent to that time that I ever obtained success in the treatment of chronic diarrhœas. I substituted for it, the mucilaginous and vegetable treatment, of which I will enter into the details hereafter. From a perusal of the case, it may be seen that Boucher was not alleviated, except by this demulcent and *anti-stercoral* mode, if I may use the expression.

I would particularly call the attention of practitioners to the duration of this phlegmasia. What obscurity, what deceit in the symptoms! Thus, the injected, ulcerated, disorganized mucous membrane of the colon, left the functions almost undisturbed, permitted nutrition, caused no pain, no uneasiness, no fever, for such was towards the close the situation of the patient, and a single glass of sweetened wine, not more than seven or eight ounces with a little tincture of canella, was sufficient to cause a recurrence of the colics and diarrhœa. There is no doubt but that death would have been occasioned by food equally inappropriate to the susceptibility of the diseased part. How often have I not seen the same accidents suddenly occur from the gluttony and indiscretion of patients, and interrupt a cure, which until then was proceeding favourably.

I have still another observation to make as regards Boucher. The catarrh and the diarrhœa would appear to be metastases of rheumatism; nevertheless, wishing to aid the effect by external means, adapted to the recall of the pains to their first seat, by the diffusible stimuli which are termed diaphoretics, I soon

found myself obliged to renounce them. This is not the only occasion on which I have been convinced that internal phlegmasiæ, from the metastasis of an external irritation, produce the same effect on the viscera, as if they had been primitive, and should be treated in the same manner. In both cases we are often reduced to the use of sedatives internally, whilst we endeavour to effect a salutary revulsion on the surface. Let us not then admit, without great reserve, the doctrine of those who advise brandy and other incendiary remedies in large and reiterated doses, in the colics and vomitings which succeed to the sudden disappearance of gouty and rheumatic pains.

Let us add to the case of Boucher another example of chronic diarrhœa almost of as long duration, and which was elucidated by a post mortem examination. Although it will be found complicated with an affection of the breast, the symptoms which belong to the phlogosis of the gastric mucous membrane will be readily distinguished.

CASE XVI.—*Violent dysentery become chronic, complicated with catarrh and tubercles of the lungs.*—Chérehal, aged twenty-three years, tall, thin, light complexion, flabby flesh, was attacked about the 20th of March, 1806, with so violent a dysentery, that he had fifty evacuations per diem, with a continual tenesmus and very acute tormina. He also had a dry cough and suffused cheeks, the pulse was frequent, quick, and of moderate strength. He entered the hospital of Udine a few days after the invasion of the disease.—I first treated him by mucilaginous drinks acidulated with citric acid, and by rice-water, adding one or two grains of opium in the evening.

The symptoms were at first obstinate, but I persisted; finally, after remaining a month in the hospital, the pains abated, the cough subsided, the stools were reduced to ten or twelve;* the febrile action was only sensible in the evening by a slight acceleration of the pulse; the patient began to experience an appetite, but he was in the second stage of marasmus. I then added aromatics to his drinks and allowed a little wine. Such was his state on the 23d of May, the sixtieth day of his disease.

* Here is a chronic state, which leeches to the anus and gum water as the sole nourishment, would have prevented.

The 31st, although he appeared to have regained much strength, he was a little œdematous. As the diarrhœa had entirely disappeared, and there only remained a slight dry cough, with some redness of the malar prominences, I thought I might add small doses of oxymel of squills to his mucilaginous drinks, which were rendered aromatic by a small quantity of balm-water; the evacuations increased to three or four and the swelling disappeared.

It was at this time, I made use of the astringent and vinous treatment, against that condition which has been denominated *relaxation of the mucous membranes*. As Chérehal had not the slightest trace of fever, I thought the indication for tonics as well marked as it could be. I gave him a sweetened decoction of oak bark, (two glasses of four ounces a day,) with ten to twenty drops of the vinous tincture of opium in each dose; the diarrhœa did not augment, but the œdema increased—I therefore added the bitter wine with squills, and applied a bandage embued with a decoction of bark and camphorated brandy over the whole abdominal region. The serosity was reabsorbed, but the pulse sensibly rose, the cheeks became suffused, and in a few days afterwards the diarrhœa increased.—Return to mucilages.—Cessation of the fever, but the œdema appeared in the face; the abdomen was fluctuating, the diarrhœa persisted, the strength declined. I gently compressed the abdomen by a girdle adapted to its form. In a few days there was no effusion or infiltration. I ordered him rice-water with gum, mucilaginous, aromatic, and anodyne juleps, and a little sweetened wine. The diarrhœa was reduced to one stool in the twenty-four hours, and the 14th of June the patient appeared to be perfectly convalescent.

The 15th, febrile action.—Demulcents. This was only transient, perhaps the effect of some secret imprudence; some days afterwards he again had three or four stools daily.

Instead of diminishing the nourishment and persisting in the employment of slightly stimulating mucilages, (which I should now do,) I tried as in Boucher, astringent injections; I was desirous of being convinced; uncertainty is a very painful state for a conscientious physician! The alvine excretions diminished, but the febrile action reappeared, the demulcents again calmed it. I was not disheartened, I again put him on the use of the decoction of oak bark and wine.

From the 1st to the 20th of July, he was almost without diar-

rhœa. I was about to give credit to the astringents for an extremely difficult cure, when I perceived that he continually had flushed cheeks, and that his legs had become erythematous over their whole extent. I sent him to the surgical ward.

The redness of the legs, being treated by emollients, was dissipated; the diarrhœa augmented—I say augmented, for Chérehal always had liquid evacuations. But, when there is only one evacuation of this kind in the twenty-four hours, the diarrhœa should be regarded as persistent, in these chronic cases.

The surgeon-major thought that it arose from a herpetic affection, and established a suppurating blister on the arm. As to the diarrhœa, he treated it by wine, two drachm doses of theriac with two grains of opium, and farinaceous food. Chérehal lived for a month in the surgical ward, without infiltration, and with as little diarrhœa as he had under my care during the first part of July. The swelling and redness in his legs were entirely removed. At last he suddenly became emaciated, was reduced to the last stage of marasmus, and died comatose at the end of the fifth month.

He always retained a slight, dry, nocturnal cough; it was but little harassing when he had not been recently heated by tonics. The circumscribed redness of the cheeks had always been more or less remarkable. The pulse, in general, was only a little frequent towards evening.

Autopsy.—Habitudo. Body long, chest narrow, in the last stage of marasmus, without infiltration, muscles pale. *Head.* A little serum in the ventricles. *Thorax.* The right lobe indurated to an hepatic consistence, the left only engorged. The bronchial glands tubercular but not excavated. Both pulmonary pleuræ covered with tubercular grains, and slightly adherent. Serum in the pericardium. *Heart* natural. *Abdomen.* Peritoneum dry. Stomach empty, dilated, its mucous membrane white and healthy. That of the large intestines, from the jejunum inclusive to the end of the rectum, red-black, sphacelated, ulcerated, thickened, finally totally disorganized. The mesentery in a good state.

Observations.—In Chérehal's case, the symptoms which appertained to the chronic phlogosis of the lungs may be easily recognised. Hence I shall not stop to analyze them. Nor will I in-

quire whether the first amelioration of the diarrhœa was a step towards the cure, and whether the too nutritious diet did not reëxcite an inflammation already subdued. The reader will judge of this question, after having observed cases which terminated in a cure. I only wish to add here some reflexions on the mobility of the point of irritation.

Whilst the patient remained in the surgical ward, it was observed that the diarrhœa several times increased after the disappearance of the erythema of the inferior extremities, and that it ceased when the latter returned. But this occurred on the bandage being on the least discontinued, because the œdema which was then suddenly reproduced, stretched the skin, and caused a recurrence of the phlogosis in it.

This alternation, and the discovery of some scabs of an herpetic appearance, which were discovered at the roots of the hair, induced the surgeon-major to place a blister on the arm, after the establishment of which he believed the diarrhœa to be terminated, and persuaded himself that all that was requisite was the restoration of the strength. The stools were certainly less frequent, but they were still liquid, which proved to me the persistence of the phlogosis. After some time they augmented in quantity, because the patient, who was always urged by his appetite, did not content himself with gruel and soup, and procured bread and meat.

Thus, although the mucous membrane was disorganized and ulcerated, it was little incommoded by the excrements arising from vegetable and mucilaginous food, but when this amendment encouraged the patient to partake of meat, the fetid excrements which arose from it suddenly revived the diarrhœa. I have so often repeated this experiment that I can announce this result as certain.

The alternations of diarrhœa and erythema might have led to an idea that the disease was of a nervous character; or in other words, that the seat abandoned by the irritation had suffered in its vital properties only, and that it remained sound. Hence the hope entertained by the surgeon-major of fixing the morbid actions or the leprous principle in the arm, by means of the blister. It is evident, however, that notwithstanding this mobility, that the mucous membrane was organically affected, and from the moment that this fatal issue ensued, that all hope was vain.

Could it have been supposed, *a priori*, that the organization of this membrane was altered in an irreparable manner? I considered the presumptive proofs of this to be very strong, from having witnessed the violence of the acute state. I have since received additional conviction, that when the cure has not succeeded, and a relapse takes place at the end of two or three months, diarrhœas, (of soldiers, at least,) are generally mortal. We find some susceptible of cure, but these are not inflammatory. I met with an individual who was affected from the time of the campaign of Egypt, with a diarrhœa, with copious bloody discharges. But this evacuation was not attended with pain; whatever might be his diet, there was no fever; it took place without tenesmus; it ceased for several months to again occur spontaneously; in short, it was rather a periodical hæmorrhage of the mucous surface than a real phlogosis. When the patient was attacked with intermittent fever, it disappeared, and was not replaced by colic. He became dropsical, perished, and a post mortem examination presented no indications of change in the colour and organization of the internal membrane of the intestines.*

Purely bilious, pancreatic, or mucous discharges from the bowels are also to be met with, which do not depend on phlogosis; but whenever the diarrhœa was febrile and accompanied with tenesmus, whenever it occasioned great debility, and caused cutaneous excretions and fetid breath, when it was exasperated by tonics; finally, when it induced marasmus, with a foul and earthy skin, I have always found on dissection that the mucous membrane of the colon was red, thickened, sphacelated, and ulcerated.

The union of all these symptoms can leave no doubt of the phlogistic character of the diarrhœa, but it may also be so, although there is an absence of some, and even the principal of them.

The following case presents a form of dysenteric phlogosis, of which tenesmus was the fundamental symptom, the alvine excretions being scarcely in sufficient quantity to constitute a diarrhœa.

* The phlogosis had really existed, but it had disappeared, and the mucous membrane had resisted disorganization.

CASE XVII.—*Chronic phlogosis of the mucous membrane of the colon, with slight catarrh.*—Pacault, a soldier in the thirty-fifth regiment of the line, aged twenty-five years, brown hair, white and delicate skin, small muscles, flabby flesh, tall and thin, delicate health, experienced several catarrhs during the German campaign of an. xiv. and 1806. He still had a cold, when in February of the same year he was seized at Trieste with a diarrhœa without fever. Tolerably severe tormina was added to this in the course of a few days, after which the patient was constipated. He was obstinately so still when he was received into the hospital of Udine, about the beginning of March. He complained of frequent colics and had an accelerated pulse, without heat of skin.

After some demulcent draughts, and enemata which could not penetrate, I gave him a muco-saccharine and oleaginous purge. Although it at first produced little effect, the bowels remained open the following days.

Nevertheless, the patient experienced colics which he referred to the epigastrium, and felt something rising towards the throat. After several similar attacks, he ejected two or three lumbrici by his mouth, and lost his speech for twelve hours. At the same time the stools were fetid and liquid, without being more frequent than in a state of health. The complexion was of a remarkable greenish paleness, and the pupils much dilated. The catarrh, although much diminished was not cured.

I administered the anthelmintic bolus of the military codex, the wine of wormwood in small doses, and after three days use of these vermifuges, a strong solution of manna with the *semen Artemisia santonica*. Not a single worm was discharged. The patient often went to the close stool during the effect of this medicine, but scarcely passed any feces. From this time the tenesmus never left him, the colics were more violent, the febrile action more marked, the physiognomy more altered.

I recognised in this exasperation the effect of the stimulating anthelmintics, and I relinquished them for milder vermifuges, such as the acidulated oils and ether; every thing was useless; I did not succeed in obtaining the expulsion of a single worm, and neither the colics, which were always the most violent in the transverse portion of the colon, nor the tenesmus, ceased to ex-

haust the forces of the unhappy Pacault, who became exceedingly pale, without becoming emaciated in the same proportion. The febrile action gradually subsided, so as to leave only a slight nocturnal frequency of pulse, not sufficient to heat the skin; the cough became less frequent and harassing; besides which, the patient paid attention to his abdominal pains only, which were now continual, and augmented on pressure. He ate very little, and the stools were small. Towards the end, his inferior extremities became infiltrated, and some fluctuation was perceptible in the abdomen.

Towards the middle of April, an abscess manifested itself in one of the trochanters, after the opening of which, Pacault became so rapidly emaciated, that the three days he still lived, sufficed to reduce him to the last stage of marasmus. He expired peaceably.

Autopsy.—Habitudo. No œdema, considerable extenuation of the muscles. *Thorax.* No trace of lesion in the parenchyma or pleuræ, but the bronchial mucous membrane was red as far as it could be followed. *Heart* healthy. *Abdomen.* The stomach healthy in all its membranes, the mucous coat of the colon red, black, thickened, and destroyed in several places by small ulcerations. A lumbricus in this, and three or four in the small intestines, which were red only in some isolated points, and without ulceration. A small quantity of yellowish and turbid serum in the peritoneum. The epiploic appendages filled with lymph instead of fat. No other apparent disorganization.

Observations.—The case of Pacault teaches us to be cautious in the use of stimulants, when there is a disposition to inflammation in the internal membrane of the digestive organs, and points out to us the obstinate and hidden nature of this disposition. In fact, who would not have believed that a constipation accompanied by colic, exacted as its first indication, a remedy which would evacuate the feces? This was given, and the patient was not relieved. When unequivocal symptoms of worms presented themselves, was it not reasonable to recur to the bitter vermifuges in a debilitated subject, and afterwards to evacuate the excrements and mucus which served as food to these pernicious insects? Well! the purgative I employed produced a tenesmus, which nothing afterwards could alleviate. What would have happened,

if, according to the rules of art, I had subjected the irritated mucous membrane to the action of drastic remedies?

This case proves then, that tonics, although called for by the prostration of the strength, and that purgatives indicated by the necessity of expelling foreign bodies, may be strictly contraïndicated by the inflammation of the internal surface of the digestive canal. These cases may be rare in France,* and in northern countries, but they are very common in Italy. But this combination is easily explainable; the gastro-intestinal phlogoses augment the mucus, and mucus develops the worms; this is what I constantly observed in the hospital at Udine. I suspect that these fatal complications are frequent in our southern provinces, they must even be met with in the north. Who does not recognise phlogosis of the intestinal mucous membrane in the epidemic described by Rœderer and Wagler? Moreover, worms were rarely absent in the bodies they opened. All practitioners are also aware that worms often complicate epidemic dysentery.

Let us note that the intestinal catarrh which caused the death of Pacault, produced scarcely any diarrhœa; the tenesmus which tormented him so long, did not produce more excretion than that which is observed in the first stage of common dysenteries. This form of diarrhœa, which may be termed *dry diarrhœa*, is very rare. After the first days of erythism it pretty regularly happens in common diarrhœas, that a stercoral discharge which is abundant and difficult to check takes place; it may occur with only one or two stools, as I have very often witnessed, but these are always liquid and copious, whilst the tenesmus of Pacault did not even oblige him to go to the close stool. Finally, the fever which was observed in this subject, was confined to a frequency of the pulse without heat of skin; it was what is termed a *nervous pulse*. As regards myself, I will still call this febrile action a *hectic from pain*; and, in my opinion, it only differs from the rapid fever of Lallemand and others, in the degree which is subordinate to the sensibility of the subject, his susceptibility and the fullness of the sanguineous apparatus. It cannot be doubted, but that the bronchial catarrh which complicated that of the colon, contributed, in Pacault, to give the pulse the consistence which it manifested for

* On the contrary they are very frequent.

some time. Thus the inflammation of the mucous membrane of the colon may coëxist with very scanty excretions, and a degree of fever confined to frequency without heat. Let us see if a still more obscure form exists.

We have already remarked that, although the diarrhœa commenced with very moderate symptoms, and without any derangement of pulse, it should be considered as inflammatory as soon as assuming the acute character, it becomes complicated with fever, tenesmus, and colic. We have observed on this subject, that every chronic diarrhœa assuming in this manner an acute form was fatal; it now remains for us to make known those diarrhœas in which the fever and pain existed in the least striking degree, although they may still be the result of a phlogosis of the internal membrane of the colon, a phlogosis which becomes manifest on a post mortem examination, by organic lesions as considerable as those which the most evidently inflammatory dysenteries have hitherto presented to us.

CASE XVIII.—*Chronic diarrhœa without fever, dropsy.*—Pelé, aged about twenty-four years, tall, presenting a dry and regular skeleton, but clothed with flabby and slightly prominent muscles—rounded form—obtuse sensibility—predominance of the cellular tissue—brown, straight, soft hair—a brownish pale and dull complexion—entered the hospital of Udine the 16th of August, 1806, with a diarrhœa, which had lasted upwards of six days. It commenced without fever, and with a few colicky pains only. When I saw him he had a slight frequency of pulse; the heat was scarcely above the natural standard; the patient rather complained of a feeling of uneasiness in the abdomen and epigastrium, than of real tormina, and experienced no tenesmus. The evacuations were easy, pretty frequent, and copious.

I first had recourse to mucilaginous demulcents, and rice-water, &c. The pulse soon lost its frequency, all pain disappeared, the appetite became vigorous, and the stools were limited to two or three in the twenty-four hours.

I wished to persist in the farinaceous and muco-saccharine regimen, but I have subsequently learnt that my patient took care to absolve himself from every kind of restriction as respected his diet, hence the diarrhœa continued. At the end of fifteen or twenty days and upwards, seeing that it remained at the same

point, without occasioning either fever or pain, and moreover believing the patient to be a rigid observer of my prescriptions, I thought that this diarrhœa might belong to the small number of those which are kept up by relaxation. I then tried opium, wine, the decoction of cinchona with gum arabic, that of oak bark, and even the acid sulphate of alumine. All these did not appear at first to do either good or harm. I became bolder, and doubled the doses. Pain in the stomach admonished me to go no further. Finally, after twelve or fifteen more days passed in similar trials, I persuaded myself that the evil was accomplished, and I reduced myself to the employment of vegetable food, wine, and opium, waiting the event, which appeared to me inevitable. The diarrhœa obstinately continued; it gradually exhausted the forces of the patient, who became leucophlegmatic. After this, he supported pretty large doses of bitter wine and squills, without exasperation of the symptoms.*

The 10th of October, the fifty-eight day, augmentation of the swelling, he became enormous, chills several times a day, uneasiness, complaints, anxiety, alteration of features, insensible pulse, the next day he expired.

AUTOPSY.—*Habitude.* Body enormously distended by infiltration. Muscles pale, small and very soft. *Head.* Water in the cerebral fossæ. *Thorax.* Lungs healthy and free, there was no effusion. *Heart* healthy. *Abdomen.* A very abundant limpid serosity in the peritoneum, which otherwise was very healthy. Gastric mucous membrane of a rosaceous tint, darker near the pylorus where the stomach was also more contracted. The mucous membrane of the small intestines as pale as it could be, especially in the jejunum, where it is generally of a flesh colour. The mucous membrane of the cœcum and right colon to opposite the spleen was thickened, but was not red except on the summit of its duplicatures or folds. From the spleen to the anus, it was of a deep red, and even approaching to black, sphacelated, fetid, and ulcerated, even with great losses of substance; there were some gangrenous eschars extending to the serous membrane, rendering the inferior portion of the colon, which

* It is in similar cases that the success of tonics has been lauded; nevertheless, the phlogosis is not destroyed, and sooner or later becomes fatal to the patients.

makes a large convolution in the hypogastrium, very easy to be torn in several places. The liver and spleen appeared healthy. Whatever might have been the medical system adopted, it must be conceded that Pelé was indebted for the advantage of passing through the stages of his disease in so calm a manner, to an obtuse nervous sensibility alone. It is seldom that a person who perishes from an abdominal affection has not a painful death. Pelé, therefore, should have suffered at this fearful epoch; nevertheless, he evinced less anxiety than most patients; it is true that the serous effusion in the ventricles might have contributed to this. We have already made the same remark on several consumptive patients who died comatose.

It may be observed, with regard to the mucous phlogosis which induced the exhaustion in this individual, that it must have commenced in the lower extremity of the large intestines: it was there most considerable; and, in proportion as it approached the cœcum, the less was the disorganization: I have met with this disposition very often; it is to be remarked, that in all cases the diarrhœa had commenced in an obscure manner, and with little pain, and thus escaped the recollection of the patients.

When a phlogosis thus limited to the least sensible portion of the canal, has existed for a long time in a subject of obtuse sensibility, without occasioning any disorder in the circulation, or even severe colics, this is what may be readily conceived, and ought to render a physician extremely circumspect in the administration of purgatives, especially of such as are bitter or saline, and which excite tenesmus. In these obscure cases, the intestinal phlogosis resembles an accidental redness, limited to the cutaneous surface, which, as yet, produces no change in the pulse, but which will excite a violent fever, if by applying styptics, spirituous liquids, &c. it be not at once removed, because it will thus be transformed into a vast erysipelas. It may equally be compared to a small-pox, which in the first symptoms of eruption, appears benign and distinct, and is rendered confluent and violently inflammatory by the lavish use of sudorifics, and by increasing the bed-clothes.

When the phlegmasia, at first very limited, extended itself in Pelé along the internal surface of the colon, the pain became severe, it gave a shock to the heart; fever arose, a general uneasi-

ness fettered the development of the forces, and suspended the digestive function; the patient sought for medical aid.

He entered the hospital; I restricted him from all food which could afford foreign bodies capable of offending the susceptibility of the inflamed mucous membrane; the pain diminished, the febrile action ceased, the digestive function was reëstablished. He was convalescent, but he gave way too much to his appetite, and copious and stimulating excrements reëappeared on the irritated surface. This time it did not testify its pain with the same energy, which probably arose from the slight activity of the functions of relation and sympathy; it limited itself to exciting an increase of the peristaltic action, which tended to expel the foreign bodies. The disease, from being general, as it has been for some days, became purely local; it was a phlogosis without pain, still kept up by the same cause, which finished by disorganizing the tissue in which it was seated, and when the evil had reached its height, the patient was exhausted.

If, during the continuance of the disorganization, the vital actions had been quickened by the pain, the decay of the body would doubtless have been accompanied with the expulsion of the contents of the bowels, as we have seen to take place in all the preceding patients. In fact, the ordinary causes of marasmus, I mean of complete emaciation, are, 1st, pain, which prevents nutrition; 2d, fever, the offspring of the pain which causes a predominance of decomposition; 3d, excessive evacuations. When these conditions are wanting in a patient whose forces are declining, dropsy is inevitable. Oftentimes even, certain circumstances cause it to appear in a greater or less degree, notwithstanding the fever; and the excessive evacuations may destroy life before the body has become extenuated. There is nothing except the want of nutrition which can have the constant effect of producing complete marasmus. But Pelé was far from uniting these conditions; he always had a good digestion, he experienced neither fever nor pain; the necessary consequence therefore was, that he perished from dropsy.

I will likewise give a summary of apyrexie diarrhœas with dropsy.—1st. Joubert, corporal in the ninth regiment, aged twenty-four years, a Parisian, light complexion, flabby and delicate, experienced a diarrhœa for more than a month, without calling for medical aid; this diarrhœa did not prevent him from

assisting in the labour of constructing the fortifications of Palma-Nuova. He lived six weeks in the hospital with this discharge, which occasioned him no other inconvenience than that of obliging him to get up sometimes during the night. He became infiltrated, and expired tolerably calmly in a slight coma. The appetite always remained very active, and I never perceived the slightest acceleration in the pulse.

The mucous membrane of the stomach was slightly red towards the pylorus; that of the small intestines healthy; that of the colon was not diseased except from the descending curve to the anus. In all this part it was red, fungous, and ulcerated. The matters contained in it were liquid and fetid; those in the right portion were dry and almost inodorous. The mesentery had some tubercular glands.

2d. Rosy, aged twenty-three years, an Italian, light complexion, pale, tall, large, flabby, and not very sensitive, entered the hospital about the 1st of April, 1806, with a rather febrile catarrh and a slight diarrhœa. The catarrh was cured in a few days, the fever disappeared with it; the diarrhœa remained. This man, a greater slave to his appetite than I ever had met with, neglected no occasion of satisfying it. The diarrhœa, always without pain or fever, induced dropsy, which rendered him monstrous. In this state he never ceased asking for food, even when he had no longer the power of lifting his enormous arms. He expired calmly, forty days after the disappearance of the catarrh, about the sixtieth day from the commencement of his disease.

The post mortem examination exhibited no other lesion than great disorganization from the middle of the arch of the colon to the anus; in several places the phlogosis had degenerated into sphacelus.

I also possess cases analogous to these three last, that is, whose distinctive characters, are a slightly marked diarrhœa, at first without tenesmus, increasing slowly, causing only a little fever, or a fever readily calmed by diet and the demulcents; finally, dropsy sometimes enormous, and a calm death. The disorganization was not very extended in the colon. The subjects were generally of a flabby, lymphatic constitution, of a clear colour verging on blond.

As this description of patients have a good appetite, and but little suffering or fever, they should be, of all diarrhœtic subjects, those

to whom wine, tonics, and astringents would be the most applicable. I repeat, none of these means ever succeeded with me. The success that I have obtained in this variety, as in every other, are wholly attributable to the contrary method. It may also be seen, from the indocility of these patients, that a nourishing and animal diet is not the mode of cure. I hope to establish, hereafter, that it is a real poison to all dysenteric patients.

Let us now examine an idiopathic intestinal phlogosis, without fever, which induced marasmus without dropsy.

3d. Bourgeois, aged about thirty, tall, large, muscular, robust, light chestnut hair, and good colour—sensitivity not very quick, if I may use the expression, but profound and contracted—perished in January, 1807, from a diarrhœa of two and a half to three months duration, (for it declared itself insensibly by the greater frequency of the stools,) without fever, colic, or tenesmus. What he experienced was rather uneasiness and anxiety, than decided pain, and was thus described by him. He died in the last stage of marasmus. It should be noted that he always had a pretty good appetite, and that, despairing of his cure from the moment of his arrival, I never refused him nourishing food nor spared tonic medicaments. I have not, however, to reproach myself with having administered them in a dose capable of occasioning fever, which is always possible. I gave them but as palliatives, to procure the patient some agreeable sensations, and thus to soften the bitterness of his situation; for he observed with much inquietude the constant increase of the marasmus, and the daily diminution of his forces. Opiated potions, aromatic and sweetened wine were the tonics used.

On the death of the patient, I found the phlogosis in the mucous membrane of the colon divided into isolated patches, and of different shades of colour. There were some of a bright red, others of a deeper colour, some were black, and on many of them small ulcerated points were observable. This disorganization extended the whole length of the large intestines, which were very tender and easily torn. The mucous membrane was every where sensibly thickened, even in the intervals of the spots, where its colour appeared to be the least altered.

If the diarrhœa had destroyed Bourgeois, without occasioning dropsy, although it was absolutely without fever, I believe that we must account for it by the nature of his sufferings, which were

themselves subordinate to his temperament. This man never experienced any thing except uneasiness; but this uneasiness is sufficient to stop nutrition, as the effects of long and concentrated grief testify. The obtuse pain which results from a phlogosis of the colon, may then, without occasioning contortions, fever, &c. like ordinary colics, be sufficiently intense to cause the organs to be harassed by the presence of food, and obliged to expel it before it is completely digested. Then there is a want of nutritive materials, and as the habitual decomposition is not interrupted, every thing contracts and becomes extenuated, as we have remarked after gastritis. This kind of suffering appears peculiar to individuals of a firm tissue, deep, but slow sensibility, and who, in a state of perfect health, are so difficult to nourish, that we always see them meagre and dry. For this reason it produces marasmus instead of dropsy; and that the patient who experiences only confused sensations, gives a very erroneous account of his situation. If then the physician does not observe him with constant attention, the mechanism of the disease will readily escape him; he will suspect chimerical causes, and will commit serious errors in the treatment.

I have already shown, when treating of gastritis, that it was easy to be mistaken as regarded the organic lesions of the mucous membrane of the *primæ viæ*, in these sort of temperaments. These reflexions have appeared to me as proper to be inserted, to elucidate the diagnosis of the various gastric affections.

I will not further multiply cases on the primitive phlogosis of the internal membrane of the gastric passages; it is but too well proved. It is, in fact, sufficiently demonstrated that every diarrhœa is the result of an augmented action of the gastric organs, and that the principal cause of this increase of action, the most common cause, is a sanguineous injection with increased sensibility of their mucous membrane, which terminates by becoming disorganized and losing all aptitude to fulfilling the necessary actions of life.

Practitioners are aware that there are other causes of diarrhœa: as for myself, who have not seen them sufficiently often isolated and independently of phlogosis, I would not undertake to trace the distinctive characters of it, especially in the chronic state. I will content myself with indicating such of these causes as appear to me the most common, with the intention only of distin-

guishing these diarrhœas from those I call *inflammatory*. 1st. A diarrhœa is independent of the irritation of the mucous surface, whenever it can be attributed, with some propriety, to the action of the muscular membrane of the canal.* There is no doubt that the diarrhœas occasioned by fright are of this number, as well as those which are provoked by commotions of the brain.† Those which succeed to cold feet are more generally subordinate to a vice of the muscular action of the intestines than to a metastasis of some material cause.‡ Perhaps the same may be said of those produced in some very sensitive individuals, by strong odours of nauseous and purgative plants, and of those occasioned by frictions with drastic substances, as colocynth, gamboge, &c.§

In all these cases, it may be taken for granted, that the influence of the brain, directed on the muscular coat of the intestines, has produced a series of actions which expelled the contents of the bowels. I would not however decide, that the odour of purgatives does not act in a more immediate manner, and that the contractions were not the effect of atoms swallowed with the saliva and applied to the mucous membrane itself.

Diarrhœa from fright, grief, or moral pain, leaves nothing equivocal as to its exciting cause. I know a young surgeon, distinguished for his talents, which he cultivates with great success, who, on the news of the death of his father, was seized with violent colics, followed by diarrhœa, and remains subject to periodical returns of this dangerous disease. Indeed it is not possible to attribute it to the mucous membrane itself, but the disease had intermissions. If it had continued, it would have been difficult for this membrane, disagreeably affected by the product of depraved digestion, not to have become at first phlogosed in its follicles and afterwards more deeply.||

2d. When an immoderate secretion of bile and pancreatic juice suddenly surcharges the intestines, the diarrhœa which re-

* If they are repeated, phlogosis soon becomes added to them.

† These also become inflammatory.

‡ They become inflammatory, and may even become complicated with peritonitis.

§ Absorbed purgatives will phlogose the intestinal mucous membrane; this is now fully proved.

|| Here is the truth; I had then comprehended it, in spite of my prejudices.

sults is not the primitive effect of an inflammatory modification of the mucous membrane. Nevertheless, admire the connexion: the bile remains in the intestines a short time, becomes heated, depraved, and is then a violent drastic, quite sufficient to occasion a phlogosis.*

There are no cases in which this mechanism is more probable than in those kind of bilious diarrhœas, which suddenly take place on the decline of continued fevers, and which have thence been termed *crises*: but whenever I have seen such crises become protracted, so as to assume the character of a chronic diarrhœa, I have met the same kind of disorganization in the mucous membrane usual in primitive diarrhœas. At whatever period of continued fever the diarrhœa manifests itself, if the patient perishes, either in the acute or the chronic stage, his body always presented me with a mucous phlegmasia of the colon.

Hence, when these kinds of diarrhœas are regarded as primarily dependent on nervous influence, acting morbidly on the two great secretory glands attached to the gastric passages, it must also be conceded that the product of the secretion may be transformed into a phlogistic poison, which acts on the mucous membrane in an analogous manner with extrinsic irritants.

But is it not more probable that the most common cause of the excess of the bilious secretion acts primarily on the mucous surface itself? Thus, when a focus of irritation is established in the interior of the alimentary canal, the bilious and pancreatic secretions are provoked by the same laws which induce them in the most regular digestion. No one can be certain that this mechanism is constant, but it will be apparent to every physiological physician that it must be very frequent.† Nature acts by simple means; the economy obeys but a certain number of laws, which never vary, although their results may be astonishingly diversified. But let us leave this discussion, let it be sufficient

* The irritation inseparable from contraction of the colon are sufficient to originate this phlogosis, whatever may be the cause which determines it. Moreover, the copious secretions spoken of are themselves induced by a gastro-intestinal irritation.

† M. Prost was fully aware of it, when he said, "when the arterial system is much developed in the mucous membrane of the intestines, the blood is still more abundant in the liver, whence it results," &c.

And it will be said that I have not cited M. Prost! I might also have quoted Bichat, who had previously made the same observation.

for us to know, that whenever diarrhœa is found to persist in continued fevers, that it is certain that there is a redness and increased irritability in the mucous membrane of the intestines, and likewise that a greater or less degree of gastritis exists, as soon as the sensibility of the stomach and vomiting are marked with some obstinacy.

We love to see the connexion of facts in the science of the living economy. The history of the pulmonary phlegmasiæ has already demonstrated to us a perfect analogy between the different catarrhs, whether primitive or with intermittent or continued fever; finally, whatever might be the cause of the febrile cough, we have always observed the same derangements in the body, and in the effect of the curative means, an action directed in the same manner. It should be the same in the different gastro-intestinal irritations. I am well persuaded that I only repeat truths known to close observers; but as there are others, and who are even very influential as respects the fate of patients, who may still entertain doubts, I will detail some cases, which, when compared with the entire mass, cannot but rectify ideas that must be formed as respects diseases of the mucous membrane of the abdomen.

III. ENTERITIS WITH CONTINUED FEVERS.

CASE XIX.—*Chronic diarrhœa following ataxic fever.*—Cosse, not more than twenty-two years of age, still beardless, light hair, tall, slender, was brought into my ward, in the hospital of Udine, in the commencement of August, 1806, in a very advanced stage of ataxic fever; the delirium was so violent, that the patient, whose eyes were sparkling and face suffused, was obliged to be restrained by force. Three or four days afterwards he became convalescent, and soon testified a very great appetite. Nevertheless, as his face was still suffused, his pulse active and frequent, and his skin hot, I was guarded as to his diet. I inquired every day respecting the state of his functions; he obstinately persisted in saying that they were healthy. Finally, I discovered that he had five or six stools every twenty-four hours. I put him on a mucilaginous and feculent treatment; he was not very docile; nevertheless, after twenty-seven days, he went only two or three times to the close stool, the pulse was slower, the

heat of skin had disappeared. I hoped soon to see him in a state of perfect convalescence, when a small abscess appeared on one of the trochanters, for which he was transferred to the surgical ward.

The abscess soon healed, and was followed by several others, which terminated as readily. Nevertheless, the diarrhœa continued, and even somewhat increased, the patient became paler, and rapidly advanced to marasmus. He was treated internally, by farinaceous and mucilaginous aromatic drinks, by opium and theriac with a little wine; the farinaceous regimen was still prescribed to him. The itch having made its appearance, an issue was established in one of his arms. Cosse at first seemed to recover; the frequency of pulse was diminished, and it was supposed that he was getting well. All this was illusory. Two paroxysms of fever with a protracted chill supervened, the diarrhœa recurred, and as the ulcers were cicatrized, he was sent to one of my wards, where he peaceably expired.

He had remained a month in the surgical ward, which with the twenty-seven days he had previously passed in the fever ward, makes the total duration of his disease two months and a few days.

AUTOPSY.—*Habitude.* Last stage of marasmus. *Head.* Nothing remarkable. *Thorax.* The same. *Abdomen.* Stomach half contracted at the pyloric end. Its mucous membrane of a bright red and a little tumefied; that of the small intestines very red, and even violet in the portions of the intestine which corresponded to the descending colon and cœcum.* These two latter, thickened, contracted, almost closed, presented a red, swelled mucous membrane, studded with a multitude of small ulcers, in the middle of which it was wholly destroyed. All the epiploic appendages contained a lymphatic matter instead of fat.

Analogous cases to the foregoing are extremely frequent, but the duration varies much.

1st. Robin had experienced in January, 1806, at the hospital of Laybach, a continued putrid fever, with sensibility of the abdomen and diarrhœa. During his convalescence he gorged himself with raw apples, and much other food of difficult digestion. The diarrhœa increased, he was a long time delirious without fever; he under-

* This affection, as well as the majority of those I have spoken of in this work under the title of *diarrhœa*, are gastro-entero-colites.

went several removals, lived in several hospitals, in one of which he was, to complete the evil, vomited and purged; finally he entered my wards at Udine, in March of the same year, being still affected with diarrhœa, which for a long time had been confined to two or three stools daily. He at last died, completely exhausted, and in a state of general infiltration. After his admission I never observed the least febrile excitement, (the forces no longer permitted it,) and his diarrhœa had been without pain for a long time past. The post mortem examination gave evidence of no other derangement than a sphacelus with ulceration, throughout the whole extent of the mucous membrane of the colon. Total duration of his disease, two months and a half.

2d. Bex, aged twenty-five years, slender and delicate, dark complexion, of a gay character, experienced during the last of March and the commencement of April, a typhus, the predominant symptoms of which were cough and diarrhœa; he retained them in a slight degree during his convalescence. Nevertheless he left the hospital. They became worse, and in June, Bex returned with a cough and diarrhœa, without pain or fever, of which he calmly died on the 9th of that month. His autopsy presented a red induration of the pulmonary parenchyma, and the mucous membrane of the colon disorganized as in the preceding patient. I ought to premise that the recollection of the adynamic fever had induced me, during the convalescence of this patient, to treat the cough and diarrhœa by tonics and corroborants, rather than by the exclusive use of mucilaginous and farinaceous articles.

3d. In January, 1807, a soldier experienced a violent ataxic fever, without any affection of the bowels. During his convalescence he was seized with a diarrhœa, which he concealed with the greatest care.* Nevertheless his food was constantly augmented. A febrile action and the odour of his perspiration discovered this disease to me, but it was too late. Fifteen days of discharges from the bowels, although they were attended with very little pain, induced marasmus and death in this patient; the death

* The gastro-enteritis which existed during the pretended ataxic fever, extended towards the large intestine, after the acute stage and the diarrhœa appeared.

was tolerably calm. *On opening* him, I found that the mucous membrane of the colon was red, high-coloured, and granular, like the new flesh in a well-conditioned ulcer. No ulcerated point was discovered, but the membrane seemed to exhale a species of white pus, the odour of which was mixed with that of the stercoral matters.*

Whenever continued fevers have left local affections of the breast or abdomen, which have not been successfully treated, I have found in those parts traces of inflammation, which differed in no respect from those left by the same affections, which had primarily arisen from causes wholly independent of any other disease. But I made another remark; diarrhœas supervening on fevers are never very painful. The colics are not violent, the tenesmus is slight, or altogether wanting, the febrile action is very often extremely slight or deficient, the evacuations are copious and easy.

What is more likely to give rise to the opinion, that all that is wanting is an astringent tonic to contract the debilitated exhalents of the mucous membrane, and to preserve to the patient fluids whose loss rapidly deprives him of the little strength the preceding disease had left him? Nevertheless, in Germany in the midst of snows, and in Italy in the midst of the greatest heat of summer, I have administered red wine, decoctions of bark, both simple or with gum, sugar, or in an emulsion, and I have never obtained in a single instance, the desired effect, in phlogoses apparently the most asthenic. I have, it is true, seen cures after the use of these medicaments, but it was only when the diarrhœa arose from indigestion or intestinal embarrassment, and had not lasted any length of time.†

We have before remarked, that *primitive* diarrhœa, which began in the most benign manner, and which passed into the chronic state, without producing symptoms capable of creating alarm, was also equally the effect of an inflammation, as that whose commencement has been marked by fever and tenesmus. We have just proved that this is the case with diarrhœas *consecutive* to continued fevers. In fact, in the patient No. 3, a diarrhœa

* An analogous state of the mucous membrane of the bronchiæ, sometimes produces a purulent expectoration that might be attributed to an ulcerated abscess.

† See the notes to pages 86 and 87.

commenced without pain during a convalescence, it continued without deranging the appetite, and did not appear to affect the general circulation, until the moment when the dissolution of the patient was imminent; and this diarrhœa, which appeared rather the consequence of a simple difficulty of digestion, than of a decided indigestion, which in the eyes of a majority of practitioners, would only have been termed a diarrhœa *a crapula*; well! this diarrhœa was kept up by a true phlogosis of the mucous membrane of the large intestines.

IV. OF THE COMPLICATION OF MUCOUS PHLOGOSES OF THE DIGESTIVE PASSAGES WITH INTERMITTENT FEVERS.

The arrangement I have adopted, requires that I now should occupy myself with phlogoses of the mucous membrane of the alimentary canal, considered as a complication of intermittent fevers. The subject is vast and extremely interesting. I feel how much it is above my powers to treat of it as fully as its importance exacts; but I shall feel happy if I shall be enabled to convince certain physicians, that the great art of completely curing intermittent fevers, is not to injure so delicate a membrane as that of the gastric passages, by applying the energetic remedies so much in vogue for breaking the series of febrile actions.

Since Professor Pinel called the attention of practitioners to the works of Morton, Torti, Werloff, &c.; since Dr. Alibert has given a summary of what these authors have said on pernicious intermittents; since, adding to his first work, the fruits of great erudition and an extensive practice, he appears to have fixed the theory of these diseases in particular,* all the cases that have been published have appeared to tend to the confirmation of the doctrine consecrated by these learned physicians. The facts with which M. Fizeau has enriched the history of intermittent fevers, (*Journal de Medecine, Chirurgie et Pharmacie*,) although they acquaint us with new and very interesting varieties, have changed nothing as regards the theory of the treatment. All the memoirs, all the dissertations published by French authors, which have come under my notice, agree in extolling the virtues of

* At the present day the theory of these diseases is still more advanced. (*See Examination of Medical Doctrines.*)

bark, or the astringent tonics which serve as succedaneums for it. They do not discuss whether these should be administered; they occupy themselves in fixing the time and the mode of administration. Finally, if the history of intermittent fevers be not complete, it appears at least that the route is so clearly traced, that the hope of soon arriving at the goal may be entertained with much foundation. Have not physicians sometimes flattered themselves that this part of medical science has been reduced to the precision of mathematical demonstrations? *Periodicity being recognised in fevers, administer bark.* Such is the general cry of physicians. Professor Pinel nevertheless perceived that there were obstinate fevers which could not be advantageously combated with bark. They are met with more especially among those of the order which he refers to the adeno-meningitic; but he was not enabled to explain himself in sufficient detail respecting those varieties which are an exception to general rules; and what is here very important, he has not pointed out the pernicious intermittents with which the bark does not agree. So that the perturbing theory has not ceased to prevail, and bark continues to be regarded as the febrifuge in all climates and in all varieties of intermittent fevers.

For some time I entertained nearly similar opinions. But, attached to military hospitals, what did I see there? a multitude of intermittent fevers very methodically treated, and resisting all the permanent or diffusible stimulants; a surprising number of stomachs revolting against the sovereign febrifuge; a general opinion among the patients that the Peruvian bark deteriorated the digestive function, and left traces which a series of years could scarcely efface. I interrogated some of my fellow physicians who had grown gray in the military service; I stated my doubts; on every side I was replied to by authorities, they swore *in verba magistri*, and quoted established usage. Nevertheless, some less hardy physicians dared to doubt, I did the same; I withdrew then to the fever wards; I descended into the silence of the dissecting room, I patiently sought for the truth.

Although having practised a year in Belgium and Holland, I was not there enabled to see as I could have wished, the complication of inflammatory gastric affections with intermittent fever. I nevertheless met with a striking example of it, and verified by the post mortem examination, during the three months I assisted

in the treatment of the epidemic at Bruges, in an. XIII. (see the case of Mossinot, Vol. I. p. 107.) It proves at least, that in a cold and humid latitude, a degree of susceptibility may exist in the mucous membrane of the stomach, which tends to phlogosis and gangrene, if it be exasperated by an obstinate application of stimulating medicaments. Other and tolerably numerous facts also concurred at this epoch, to make me comprehend that all the intermittents which are attended with cardialgia, vomiting, and colic, are not advantageously attacked by bark; it was making a great step in medicine to learn how to adopt the most advantageous plan to the patient in these difficult cases.

Transferred in Germinal, an. XIII. (1805,) from Bruges to Nimeguen, a healthy and but slightly marshy country, I saw none but simple intermittents; which, moreover, existing in well nourished individuals, not worn out by fatigues, were rarely rebellious, and yielded to bitters and a small dose of bark, with a readiness that was very satisfactory to the physicians. During a whole spring I found three fevers only which resisted the bark. Two yielded to demulcent and slightly stimulating potions. In the third, the sensibility of the stomach forced me by degrees to the employment of simple mucilages, during the use of which, the disease disappeared in a very favourable manner. But so far no post mortem examination.

At Vourden, where I received the sick from the camp at Zeist, during the hottest part of the summer, the same facility in the cure of intermittent fevers.

At Medemblik, a hospital appropriated to the sick from the fleet in the Texel, in Fructidor, few observations on these diseases; scurvy and contagious malignant putrid fever attracted all my attention.

In the hospitals we provisionally established in Germany, during the winter of 1806, I had not time to examine the effects of intermittent fever on an extended scale. It was at Udine, in Friuli, that this spectacle awaited me.

The town of Udine, situated in a plain at the foot of tolerably high mountains, which form part of the Julian Alps, is built on a dry and gravelly soil, which is never transformed into a marshy mud; but all the fields are surrounded by ditches, which are filled from time to time by the rains, and by the torrents which suddenly rush from the mountains in rainy weather. During all the

fine weather, which lasts tolerably long in Friuli, the rainy days are replaced by serene weather, which causes an evaporation of the stagnant water of the ditches, either wholly or in part, until a fresh storm again fills them. In this manner there is always a certain quantity of mud exposed to the air. All these ditches are filled with frogs or small toads, whose spawn and excretions render the water always thick, mucilaginous, and fetid.

It is to this disposition of the country in the vicinity of Udine and its neighbouring villages, that I attribute the frequency of intermittent fevers, which prevail from the month of May to the end of the autumn; for otherwise the sky is clear, the scite well exposed, the currents of air sufficiently free, and there is no plantation of large trees close to each other, and capable of producing partial stagnations in the atmosphere, or to cause a predominance of an injurious humidity.

The majority of our soldiers lived in different villages and cantonments at some miles from head-quarters. In March and April, 1806, no intermittent fevers; the *typhus*, a consequence of the fatigues and privations of the campaign, still reigned alone, under the form of petechial fever. It soon lost its contagious property, and as soon as the fine weather commenced, the intermittents began to replace it. They were at first tertians and readily cured. I employed ptisans and bitter decoctions, and but rarely bark; I reserved this for the most obstinate cases, which it generally removed in two or three days, when given in from two to four drachm doses.

In the midst of this success, two reverses took place in quick succession, which obliged me to study more particularly the patients to whom I proposed to administer this heroic medicament; a patient who, nevertheless, presented no signs of what is termed *plethora*, was affected with a tertian fever, the paroxysms of which were tolerably intense; after the first dose of bark the fever became quotidian; after the second it assumed the continued type.

A second passed after the first dose of the remedy from the quotidian to a continued form. Not being able to save the former of these patients, notwithstanding the use of demulcents, to which I had been finally reduced, from the sensibility of his stomach, his body presented both inflammation of the lungs and of the stomach. The second, more fortunate, was cured by lemonade

and other relaxing and sedative means. As the phlogosis of the gastric passages appeared idiopathically about the same period in a great number of other patients, I discovered that it was requisite to divide my fever patients into two classes: 1st, those who could support the bitters and the bark; 2d, those in whom the stomach being too delicate, required milder means. But these means, what were they? I recollected the ancient precept which recommended the employment of the antiphlogistic treatment before the febrifuge in vernal intermittents; it was requisite to determine the limits of this plan.

It appeared to me that bleeding was very rarely admissible; that the greater number of these phlegmasiæ with which tonics agreed so badly, were nevertheless accompanied with a feeble pulse in the intermissions, and appeared to occur most frequently in slender, pale, and sensitive individuals.

Whilst pursuing these researches, I perceived that several patients, whose stomach was not visibly injured by the bark, after its use, were seized with diarrhœa, and I soon had opportunities of convincing myself that this diarrhœa was as truly inflammatory as the best characterized dysentery. I at the same time saw that those who were admitted with the intermittent fever and the diarrhœa, already well established, bore the bark, and even bitter drinks, whether aqueous or vinous, very badly.

I arrived then at the conviction I wished, namely: 1st, that intermittent fevers in the actual constitution were frequently complicated with a phlogosis of the mucous membrane of the alimentary passages; 2d, that this phlogosis completely forbid the treatment of intermittent fevers by bitters and bark, even in the most urgent cases; 3d, that the gastric symptoms which predominated during the paroxysms were most generally indications of a phlogosis opposed to stimulants, that a *pernicious* type required the Peruvian bark;* 4th, however asthenic this disease appeared, when grafted on a disease which has been given us as the prototype of affections from debility, it could not be combated by stimulating medicaments; 5th, that nevertheless it was indispensable to destroy, or at least to weaken it before attacking

* Notwithstanding this observation, we still find practitioners who speak of pernicious fevers, as if no one had ever conceived the idea of establishing a distinction as necessary as that under consideration.

the febrile type, because it became more promptly fatal than the most violent fever in the actual constitution; 6th, finally, the last and most terrible truth demonstrated to me was, that the intermittent fevers I had under my care, most generally were not mortal except from the sequelæ of the inflammation which caused my embarrassment; this was not astonishing, as the increase of the heat had already destroyed the catarrhal complication, another circumstance which too frequently renders them fatal. (*See what I have said of intermittent fevers, when treating of catarrh, Vol. I.*)

This concentration of forces to the interior, or if this expression be objected to, this violent accumulation of blood in the capillaries of the viscera, which exists during the cold stage of intermittents, becomes peculiarly fatal to the lungs during the cold season; but in the summer and in warm countries, its effects are rather felt by the digestive organs. Our soldiers had just undergone long-continued fatigue and great privations; they had left a cold and humid country, where beer was their habitual drink; they suddenly found themselves in a warm latitude; they now rested, and drank a wine which, if not very strong, was at least very acrid from the abundance of its colouring matter. The susceptibility of their gastric organs was, therefore, considerably augmented. Those among whom this disposition was carried to its greatest height, died from gastritis or dysentery, according to their temperament and accidental causes. A great number of others, although predisposed, still resisted the disease; but if whilst in this state they were seized with intermittent fever, the central concentrations of the cold stage at once determined phlogosis in the mucous membrane of the alimentary passages, and if the bark or other stimulants added to this irritation, the progress of the disorganization was proportionably rapid.

As soon as this point of irritation was established, nothing was more difficult than to displace it. Emetics gave it an additional degree of activity; bark changed it into a marked and fixed phlogosis which immediately transformed it into a continued fever;* wine and bitters had the same effect. Nothing was more com-

* Here are proofs of the inflammatory character of the irritation of intermittent fevers, and the germ of the ideas I have developed in my two examinations of these diseases.

mon than to see men, who, during the chill, complained of cardialgia, nausea, and vomiting; and if to prevent the subsequent paroxysm, they took bark, the intermittent form ceased, and a continued fever took place, with symptoms of gastritis, which we were very happy when we could moderate with mucilaginous and acidulated drinks.

I have remarked that emetics were much less dangerous. The efforts of vomiting were less injurious to the phlogosis than the bitter and astringent stimulants. Is it on account of that expansive force of emetics which quicken all the actions at the same time, and which has obtained for these medicaments the reputation of being antispasmodics? I feel disposed to believe so.* I have also less dread of ipecacuanha in these cases than of tartar emetic. Nevertheless, neither this root, nor even still more simple preparations by which contractions of the stomach may be induced, as tepid water, either pure or mixed with oil, honey or butter, have appeared to me to be exempt from danger in the complications of intermittent fever with gastritis, even when the latter is slight. Sometimes the vomiting, when artificially provoked, has lasted for several days; at others, the continued irritative fever has been the product of a single emetic, improperly given; finally, I have had occasion to congratulate myself, that this evil was made known to me from the experience of others, before I had an opportunity of exposing myself to it.

Practitioners have not sufficiently adverted to this complication of internal phlogosis with intermittent fever; we every where find it recommended to treat the fevers accompanied during the paroxysm with a painful point in any part, by strong doses of bark. Physicians have been content with arranging them in the class of pernicious or ataxic intermittents, and boldly menace with death, and a very speedy one, those unfortunate patients in whom the employment of the sovereign febrifuge shall have been limited. They do not appear even to have a suspicion of a true phlogosis; it is sufficient that the intermittent type be perceived, for all the phenomena to be thought nervous, and the bark resorted to.

* I now think that a physiologist ought not to doubt it. (See in the *Examination* the propositions in which the march of the phenomenon of irritation is developed.)

There is another error, not less fruitful in danger; all the cases, even those which are known, are not foreseen; all the precepts laid down are for the physician who is called in during *the early stage of the disease*. But if the pernicious fever, badly treated, has not been suddenly fatal, the physician is not told whether he is always to treat it in the same manner as at its commencement; he is therefore led to suppose it. It has never been thought worth while to trace for the young practitioner, who is about to be suddenly entrusted with the care of several hundreds of fever patients, all different in their epochs, and differently treated at their commencement, what conduct he is to pursue to extricate himself from such a labyrinth. But I am wrong: he is told of engorgement of the viscera, of obstructions, and of dropsies which result from them; he is presented with a long list of aperitives, diuretics, &c. as if he had no other disorders to fear than obstructions in the prolongation of intermittent fevers. What must be the result, if unfortunately the remains of the fever which is to be combated, is allied to gastro-intestinal phlogoses.* The remedies themselves put the seal to the incurability of the disease, as all the pharmaceutic apparatus that is brought to bear on the obstructions, is drawn from the class of irritants.

From this deplorable vacuum in medical science, it results that the treatment itself is very often the cause of the obstinacy and fatal termination of intermittent fevers. In fact, there can be no middle course; so soon as gastric phlogosis exists, the bitters and bark become inevitable poisons to the economy; the physician must therefore have the courage to abandon them; his prepossession for obstructions exposes him to become as dangerous to patients with solvents and incisives as he was with febrifuges; he must therefore renounce them; but the prospect of debility frightens him; let us dare to advise him to brave it, as the danger arises rather from the excess than the want of stimulus. It is the result of facts that I now proclaim, but before this is credited, how many will yet fall victims to the tonic and stimulating plan.† It is therefore important to show the strength of my evidence as soon as possible. This I must proceed to do by cases.

* The remains of this phlogosis itself became continued and chronic, and the engorgement of the parenchyma was the effect of it.

† This prediction, already justified by the past, may be still more so hereafter.

The post mortem examinations I am about to detail will afford proofs of the gastric phlogosis and the danger of stimulants. The fortunate cases which I shall give in the article on the treatment, will furnish corroborative proofs, after which the conclusion may be readily drawn.

CASE XX.—*Quotidian fever with gastro-intestinal phlogosis and aneurism of the heart.*—Bernard, a soldier in the ninety-second regiment, aged twenty-one years, medium height, rounded form, rather slender, dark chestnut hair, born of parents who died young, had experienced no disease of any consequence from his infancy, but had been subject to frequent colds since he joined his regiment. He had been affected with quotidian fever and diarrhœa for nine days before he entered the hospital. He was at first treated by an emetic and bark; but at the end of five days he was transferred to my wards, on account of the closure of the hospital into which he had been received.

In consequence of the dyspnœa, of a dry cough, diarrhœa, and an extreme gastric sensibility, which forbade the use of too active medicaments, I determined to combat the intermittent by the vinous tincture of opium mixed with mucilaginous juleps. In four days, all traces of it had disappeared, and the stools from fifteen in the twenty-four hours, were reduced to three. Nevertheless, I constantly observed redness of the cheeks, frequent cough—quick, heightened, and somewhat convulsive respiration—mucous and opaque expectoration, anorexia, anxiety, with that elongation of the features which indicates a suffering of the large viscera, frequent pulse and morbid heat of skin. To this was added a feeling of weakness and insurmountable dejection. This double irritation of the chest and abdomen alarmed me; it pointed out to me that the viscera were weak and much disposed to phlogosis, since the intermittent fever had already caused so much disorder in their functions. As soon as I found the febrile type had disappeared, I limited my treatment to demulcents. A slight appetite arose; the frequency and heat diminished. He enjoyed this calm for three days. I constantly augmented his food a little.

Suddenly a return of the first symptoms; the uneasiness and distaste for food at their height; respiration convulsive; cough continual; rapid decomposition of the features; sudden emaciation. All his sufferings increased; a sort of despair. He always

continued lying on his right side, the head and limbs flexed, afraid of suffocation every instant. The whole trunk had become painful. This state degenerated into a very violent agony which terminated his torments.

AUTOPSY.—*Habitude.* Emaciation, but not marasmus; the muscles were of a beautiful red, firm, and tolerably large. *Thorax.* Lungs voluminous, much engorged, and as if varicose, crepitant and free. *Heart* manifestly dilated in its four cavities, which contained well-organized concretions. I mean that they were of a grayish colour, and when cut, presenting communicating cells filled with a limpid water, and on pressing out this liquid, that there remained a membranous tissue analogous to the cellular. *Abdomen.* Stomach contracted, its parietes in contact, its mucous membrane thickened, of a red colour, approaching black, without ulceration. The redness of that of the colon was much lighter, and also without ulcer. The liver, very red and very large, gave out much blood on being cut.

Observations.—I would have wished to have been enabled to present the autopsy of a simple gastritis in the acute stage, complicated with intermittent fever; but this simplicity is difficult to find, because the effort which disorganizes the membrane of the stomach, at the same time implicates the other central viscera. When then this disorder is sufficiently violent to destroy life, without having exhausted it, the gastric phlogosis is rarely found alone; this was the case in Bernard, whose heart was aneurismal, whose viscera presented capillaries at least three times as large as they would be in a robust man carried off by a violent death.

The gastritis may occur uncombined after fevers, when death does not take place until after the cessation of the intermittent type, from the effect of the exhaustion depending on the repetition of the paroxysms and the obstacle opposed to nutrition by the mucous phlogosis. An example will soon be given. Here then are two modes in which intermittents may become fatal, independently of the ataxic character: 1st, in a short time from an acute phlogosis and violent engorgement in the viscera; 2d, in a longer time, by exhaustion of the forces, which often induces chronic engorgement of the central viscera, and by the concomitant effects of a slow phlogosis of the principal vital organs. Bernard furnishes an example of the first variety.

If we seek to discover in him what were the symptoms of each

lesion, we find; 1st, the cough and the dyspnœa of the pulmonary engorgement and of that of the heart; 2d, the anorexia and exasperation during the use of stimulants, of the gastritis; the diarrhœa of the irritation of the intestines, and doubtless also of that of the liver; 3d, the anxiety certainly belonged to the disorders of the centre of circulation, but it must be observed, that the gastritis also communicated a greater intensity to it. I have constantly verified that violent peripneumonies, those which were fatal in the acute stage, and in which were to be perceived much uneasiness, agitation, distaste for all exciting drinks, a distaste founded on the fact, that the slightest irritation of the stomach brings back the cough; I have, I say, always verified that these peripneumonies were complicated with a phlogosis of the mucous membrane of the stomach. In those which were protracted, whilst the medicaments termed *expectorants*, such as the kermes and the preparations of squills, exasperated the cough, I have never failed to find, after death, a phlegmasia of the same membrane. Very often, however, in neither of these cases is pain in the epigastrium or vomiting to be remarked; this is because the point of irritation is much extended. And, in fact, when all the chest is painful, when the shootings spread over the whole vault of the diaphragm, on which the phlogosed lung rests, it is very difficult to distinguish gastric from pectoral pain: they become confounded in the feeling of anxiety. As to vomiting, it is far from being an indispensable symptom. Carbolin had it not; many others also were destitute of it. On the other hand, is it not known that the efforts of coughing provoke it, without any complication with phlogosis of the stomach?

Hence, whenever we perceive a repugnance to warm drinks—a marked aversion to every thing which tends to excite gastric action—increase of the cough from the use of stimulating substances—finally, a desire for cold and acid articles, to coincide with the cough and dyspnœa, whether acute or chronic, we cannot mistake the phlogistic disposition of the stomach, and nothing should prevent the employment of aqueous and relaxing medicaments.

As Bernard was far from being exhausted, and as there was then no predominance of any contagious principle tending to rapidly destroy the energy of the nervous power, I have no doubt that he would have survived his disease, if from the be-

ginning he had been treated in this manner; perhaps there was time to have recurred to it on his first entrance into the hospital; who knows even if the equilibrium was not reëstablished when that amelioration of three days I have mentioned took place; if, instead of satisfying his appetite, I had strictly confined him to an aqueous and debilitating treatment? I have obtained, by this plan, cures so unexpected, that I think I have the right to make this assertion; but this is not the place to discuss it.

Was the aneurism perceptible in this body, although slight, the simple effect of interior congestions which are always produced by the action of cold, or was it a disease anterior to the fever? It is easy to conceive that the centripetal action which accumulates the fluids in the internal capillaries, must prevent the heart from emptying itself entirely at each systole, if this viscus be already larger than it ought to be, and too feeble in relation to the sanguineous mass it was destined to move. (See what I have said on the danger of intermittent fevers in persons who have some predisposition to aneurism, Vol. I. page 110, &c.)

The sudden death from engorgement and phlogosis of the viscera, depending on an intermittent fever, of which we are furnished with an example in Bernard, is not very common,* because few men have the necessary predisposition. I have sometimes met with it, at the commencement of my practice; the close attention I have always given for some years past to calculate and prevent the effects of a concentration on the viscera, has rendered it very rare with me. Hence I shall limit myself to a single example. Besides, this work being devoted to chronic diseases, I should only admit the acute affections as indispensable links in the connexion of facts. I shall now continue the history of slow phlogoses of the mucous membrane of the digestive passages, by the case I have spoken of; of chronic gastritis which, by its complication with an intermittent fever, militated against the reëstablishment of the forces, and finally conducted the patient to the tomb.

CASE XXI.—*Tertian intermittent fever with chronic gastritis*.—Certot, aged twenty-two years, medium height, irregular form, muscles slightly developed, health delicate, was seized

* All Brunonians think it is common.

with tertian fever the 19th of June, 1807: he entered the hospital of Udine the next day. From the alteration of his features, and the singular discoloration of his skin, which presented a mixture of paleness, lividity, and lemon-yellow colour, very disagreeable to the eye, I judged that this disease would be extremely obstinate. I secretly attributed it to a profound affection of organs which are most concerned in assimilation. The excess of the anorexia without any sign of saburra, without eructation or borborygmi, induced me to believe that the stomach was the most altered. Nevertheless, the ataxic character of the paroxysms did not permit me to postpone the use of bark, which in fact removed the fever with tolerable facility, but the complexion, the strength, and the appetite did not improve. I had recourse to mild tonics combined with demulcents, and a farinaceous vegetable diet. The convalescence was not established.

After seven or eight days of this state, the fever reappeared; this time the bark in substance was rejected by the stomach, and its presence increased the uneasiness and anorexia. The decoction of this substance with gum, or in an emulsion, was better retained, and suppressed the paroxysms in two or three days.

This relapse had weakened the patient in an extraordinary manner; his discoloration especially made me despair. I put him on the regimen of patients attacked with obscure gastritis, or with sensibility of the stomach menacing phlogosis. Nevertheless, I could not prevent the tertian fever again recurring at the end of four or five days.

In this new relapse the bark was inadmissible in any form; it kept up an insupportable epigastric pain, and deprived the patient of all appetite for food. Certot never ceased to complain of a sensation of burning and repletion in the region of this viscus. I had recourse to gummy and mucilaginous, anodyne, and slightly aromatic potions. A continual heat, with tendency to chill and the progress of the decay, promptly obliged me to relinquish it, and to attack the intermittent by external means only. Frictions with the alcoholic tincture of bark, which I have employed with much advantage in similar cases, finally succeeded, and I saw my patient quite convalescent.

Nevertheless, he was extremely weak; he still retained his bad colour; the obscure sensibility of the epigastrium persisted; it did not prevent him from eating, it did not occasion any vomiting,

but it gave an expression of suffering, and chagrin to his features, and a death-like paleness to his complexion. The stools were sometimes two or three a day; seeming to be in proportion to the food.

I did my best to hasten the reëstablishment of this patient, without resorting to any but light and easily digestible medicaments; I varied my prescriptions, in order to follow the progress of the forces of the stomach. Although Certot did not acquire additional strength, he appeared to digest tolerably well; he was allowed towards the forty-seventh day a three-quarter's allowance, without its causing any appreciable febrile excitement, when suddenly all the organs gave way simultaneously. I now perceived an absolute want of appetite, languor, apyrexia, and even cold skin, and almost insensible pulse, paleness and cadaverous alteration of features, no fetor; gradually immobility, indifference, inaptitude for every kind of intellectual operation, absence of every secretion; the stimulants were without effect. Certot died the fifty-fifth day of his disease.

AUTOPSY.—*Habitude.* One-third marasmus, muscles pale, no œdema. *Thorax.* Right lung adhering in some points by semi-organized, gelatinous productions, redness, impermeability to the air in one part of the parenchyma, but no hardening or *hepatization*. *Heart* healthy. *Abdomen.* Stomach contracted in its pyloric half, dilated at the *bas fond*. All the mucous membrane of this portion tumefied, as if ecchymosed, and of a very deep red, that in the vicinity of the pylorus also red, but in a less degree. Mucous membrane of the colon, red at the commencement of this intestine, and in the cœcum, healthy in the middle portion, red and tumefied in the descending part to the anus; rather large red spots, but distant from each other, the whole length of the small intestines.

Observations.—The phlogosis of the mucous membrane of the stomach presented itself at Udine, with the intermittents of 1807, as often as with those of the preceding year, of which I have noticed the progress; but whether our soldiers were better acclimated, or the practice of beginning with the use of diluents in doubtful cases, and never insisting on that of tonics without necessity, rendered the consequences less fatal, I never afterwards met with it simple and predominant as in Certot. When it existed in a high degree, the intermittent did not usually exist; but

it very often happened that a somewhat mild form of gastritis was joined to an extended and obstinate phlogosis of the mucous membrane of the large intestines; the whole complicated with a paroxysmal fever of one type or other.

Let us first present a view of these combinations; the reflexions that they will occasion us to make, cannot be destitute of interest. I will first examine that of the cases of this kind I possess, which appears to me the most allied to the acute form.

CASE XXII.—*Intermittent fever changed into continued, with phlogosis of the thorax and abdomen.*—Tarien, aged from thirty-four to thirty-five years, large, muscular, dark complexion, and very robust, was attacked about the 25th of July, 1806, at Udine, with a quartan fever, with which he was affected thirteen days before he entered the hospital. Gastric symptoms determined me to prescribe an emetic; afterwards I gave some bitter drinks, and as the fever did not yield, some drachms of bark in powder. After two or three paroxysms, the fever became a tertian. I wished to double the dose of the febrifuge; the slight reâction, which was not at all proportioned to the strength of the patient, encouraged me in it. The following day the fever was quotidian, and, without the bark being continued, the paroxysms became longer, and were at last continued, about the twenty-ninth day of the disease.

From this time to the forty-second day, I observed only a frequent, strong, and developed pulse, heat, want of appetite; but a clean and moist tongue, moderate thirst, no nausea, striking regularity of all the excretions; the patient became paler and lost his *embonpoint*.

This febrile action resembled none of the continued fevers of our nosologists,* it was then symptomatic of a local irritation; I was aware of this, but which was the affected organ? The want of appetite did not appear to me sufficient to indicate a gastric phlogosis. The patient grew weaker, I thought that I ought to

* We here see the embarrassment of the ontologist, who requires groups of symptoms absolutely analogous to those of his models, to be able to recognise a disease. This fever, on the contrary, resembled all those of the ontologists, except in some slight shades, wholly subordinate to differences of intensity. How much I feel alleviated since I have done justice to the absurdities of ontology, and how I pity those who are its slaves!

make his drinks somewhat stimulating; I made him take either aromatic solutions of gum arabic, lemonade with wine, or barley water with honey and a few spoonfuls of sweetened wine. The more powerful excitants I wished to try, appeared injurious. Finally, I perceived that the patient acquired a slight appetite,* and I had hopes of his recovery, when on the forty-second day the patient complained of slight cough.

From the forty-second to the fifty-sixth day, the pyrexia several times diminished, but did not entirely cease. I remarked that these variations corresponded to the food; when I allowed more than soup or gruel, the febrile action increased. Hence, food taken beyond a certain quantity, and doubtless ill-digested, changed as well as all tonic medicaments, into a stimulus very trying to the digestive tube; and this pain excited the fever as long as the patient had sufficient strength and fluids to be susceptible of it. But the mucous membrane of the colon, finally losing the remainder of its energy, became phlogosed from the influence of these continual irritations; this was marked by diarrhœa, which took place on the fifty-sixth day. At the same time also, the pyrexia increased, but only in the frequency of the pulse, for there were not sufficient materials for it to assume its former violence.

From this time, fearful progress of the phlegmasia of the colon, violent tenesmus, bloody and copious stools. The vivacity of the circulation and the heat of skin yielded in three or four days to the effects of their own action; for, there was soon, rapid extenuation of all the tissues, universal collapse, small and slow pulse, icy skin; all this without any alleviation of the dry cough and suffocation. It was evident that Tarien could not resist for any length of time a union of so many evils; he sunk under them on the 3d of October, the sixty-seventh day, after a slow but not very painful agony.

AUTOPSY.—*Habitude.* Two-thirds marasmus, without infiltration, skeleton well-formed. *Thorax.* Very solid induration of the posterior half of the left lung, the other healthy; no adhesion. *Heart* natural. *Abdomen.* All the folds of the serous membrane perfectly healthy; the liver equally so. Gastric mucous membrane of a clear red, but very thick. That of the small

* These are the perfidious ameliorations which encourage the stimulators, and perpetuate their deplorable obstinacy.

intestines in its upper part presented some isolated red points; lower down, near the end of the ileum, it was of a deep red, black, granular, and generally sphacelated and ulcerated. An analogous disposition throughout the whole length of the colon. All the granulations were so many small ulcers, with loss of substance of the membrane; the appendages of this intestine studded with small black glands.

Observations.—Here is an intermittent fever, which owes its fatal termination to a tolerably rapid phlogosis of the viscera. It was this phlogosis which prolonged the disease, which united the paroxysms, and exhausted the forces. It succeeded to the fever, as in the preceding case. Hence, it was the paroxysms which, by their long repetition, exhausted the forces and destroyed the tone of the internal capillaries. But let us reason on this phlogosis without bias.

Of the sixty-seven days this disease lasted, forty-two were without local symptoms; the patient coughed during the twenty-five others, and the diarrhœa was obvious only the eleven last. Where was the irritating cause seated before the cough, and when no viscus suffered in a particular manner? * We see at first only a prolongation of the intermittent paroxysms, in consequence of an irritation exercised on the mucous surface of the alimentary canal. Had the irritating cause already acted on this organ? But what then were the symptoms of it? † was it of the same nature as that which had at first developed the intermittent action? ‡ or was there rather only a sensibility of all the viscera, produced by the bark and other tonics, which, excited by fresh stimulants taken into the stomach, kept up the febrile reâction? § Is this case analogous to that of Defoss and others, which I discussed a few pages back? Was it allied as well as those cases, to what has been termed an *inflammatory diathesis*? Can the different shades of this diathesis be clearly distinguished, and afford some satisfactory data as to its treatment?

* It was seated in the gastric passages, although there was no pain. This irritation is attested by the sympathies, as I have proved in the *Examination*.

† Those of gastro-enteritis, which are termed *bilious fevers*, *inflammatory fevers*.

‡ Yes, it was the same.

§ This sensibility, a true shade of phlogosis, preceded the use of tonics, and this explains their bad effects.

I do not feel competent to resolve all these questions; but I can commence to treat of them. Facts have forced me in spite of myself to admit the following:—

Close observers have spoken of the inflammatory diathesis. Cullen regarded it as a state of extraordinary activity and particular mobility of the sanguineous system, during the continuance of which, the least local excitant may concentrate all the actions on a single point, and develope there a considerable phlegmasia. He often speaks of destroying this inflammatory diathesis, which he regards as the source of a multitude of diseases.

As for myself, adopting the idea of this great man, but giving it more latitude, I say, *there exists in the human body a state in which local irritations provoke inflammation with greater ease.* Afterwards investigating if these cases were as rare as is generally supposed, and if they limited themselves to this state of sanguine exuberance, which is termed *true plethora, plethora ad vasa*, I found myself drawn beyond the received opinion. I thought I saw, in short, that in the greatest majority of diseases this diathesis was possible.

1st. First it exists, as every one allows, in young, robust, and plethoric persons, who live well. It is a long time compatible with health; but the longer it lasts, the more its effects are to be dreaded, if it becomes local; in fact, the long continuance of the excitement kept up by the continual introduction of stimulants, is a sort of inflammatory fever. When this has weakened the individual to a certain degree, local irritations very readily induce phlogoses.

Another and not less powerful cause disposes plethoric men to phlogoses; this is a sudden debility. If they then are exposed to a local irritation, phlogosis is imminent. Hence, why peripneumonies attack in preference robust drinkers, and those who abuse their forces, in giving themselves up to venereal excesses, or to exercises which very speedily fatigue. If individuals thus prepared, that is, who have suddenly used a great proportion of their forces, are exposed to cold, or violently stimulated in a sensible part, they contract an inflammation there with great facility.

2d. This is applicable to patients, and above all to those actually attacked with a continued fever. The individuals who, in their continued fevers, have a frequent, active pulse, and who in

addition, have a tolerably quick nervous sensibility, which are found united, will very readily be attacked with a local phlogosis, whatever may be their degree of plethora, if they commit excesses in eating or irritating medicaments. They will be attacked the more readily in proportion to their exhaustion, that is, according as the sum of their forces is about to be destroyed. Let us cite some examples. Debilitated persons, before being seized with continued fevers, are those who most readily obey the action of emetics or purgatives, and it is also in them that these remedies most easily produce phlogoses of the abdomen. Nothing is more common than to see patients escape the unfortunate consequences of excessive evacuations, which ignorance has subjected them to, during the first days of acute affections, even of the most inflammatory nature; but if fever patients are still tormented towards the middle or decline of the apyrexia, before the reaction has subsided and the nervous activity abated, they are liable to super-purgations and diarrhœas which continue during the convalescence, and which are the result of a mucous phlegmasia. This fact was announced by the ancients, in saying that evacuants troubled the labour of nature, and disconcerted the critical efforts. I have frequently observed that bark, wine, serpentaria, &c. were borne by soldiers during the first days of typhus, although the reaction was still somewhat active, and too often I have seen that they induced gangrenous inflammations in an advanced stage of this disease. Those typhus fevers which cause the greatest debility in the nervous apparatus, in those which arise from crowded rooms, in those of prisons, and in the plague, it sometimes only requires the action of an emetic, a purgative, or of bark, to determine a sphacelus of the abdominal organs.*

3d. In intermittent fevers, this disposition to inflammation may be observed, increasing with the progress of the disease. It is commonly said that a purgative is sufficient to recal the paroxysms; but what is not said is, that evacuants administered in

* Here is also one of the observations which led me to determine the character of *typhus* and of *adynamic* fevers. Hence, I have the right to repeat, in spite of the petty quibbles of some cavilling physicians, who constantly invent some points of the physiological doctrine after reading, that if I had respected certain authorities less, I should even then have denied essential fevers. Let them still vaunt the services rendered by nosographical ontology.

the advanced stage of these fevers often cause a fatal diarrhœa. Above all, what is not said, and what perhaps is not fully believed, is, that the bark, usually well borne at first, occasions, alas! by far too often, if the patient be forced to take it during the advanced stage, anorexia, vomiting, and diarrhœa, which hasten the dissolution of the patient. But if attention be paid to compare these diseases which are treated as symptomatic with those which are primitive, and to make frequent post mortem examinations, the cause of the disease will be recognised in the phlogosis of the internal surface of the digestive passages.

4th. In all chronic phlegmasiæ which keep the sensibility roused, and the arterial system in a certain state of excitement, this aptitude to phlogosis exists, and it is always proportionate to the degree of the primitive phlegmasia; but it never becomes more evident than towards the decline of the disease, when the patient's forces are soon exhausted. It is known that consumptive individuals, and those who are extenuated from a suppurating wound, do not become affected with diarrhœa till towards the close of their life. This diarrhœa, which is termed *colliquative*, and which is never treated except by the most powerful tonics, (in routine practice,) is regarded as the signal of approaching dissolution, Well! would you wish to prove that it is inflammatory? open bodies. Do you wish to satisfy yourself of its phlogistic character during life? observe it on an extended scale. You will find that it rather attacks such consumptive patients as have followed a heating regimen, than those who have been treated on a cooling and antiphlogistic plan; that gluttons and drunkards never escape it; that a purgative or an emetic employed at this epoch when the resources of life are nearly exhausted, almost inevitably induce it. Since I have relinquished stimulants in hectic fevers from local phlogosis, and I have taken care to proportion the food to the degree of the assimilating force, I have never met with this colliquative diarrhœa, except in such patients as satisfy their appetite clandestinely. (See what I have said, Vol. I. p. 344.)

5th. Finally, the last fact which struck me, was that tendency to phlogosis which appears to arise from analogy of structure and functions in patients who perish from a chronic inflammation. Chronic pleurisy is often found complicated with peritonitis before becoming fatal, and *vice versa*. The mucous membranes also

appear to communicate the irritation of one viscus to another, when one of them has almost exhausted the general forces from a phlegmasia of long standing.

Let us return to the patient who has given rise to this dissertation. He found himself successively in two of the predicaments I have enumerated. 1st. From enjoying a great nervosanguine activity during the first part of his fever, he had all the viscera very irritable, but none absolutely phlogosed;* he was in the inflammatory diathesis during the interval of these paroxysms.† The viscera having been stimulated, the intermittent type disappeared, and the diathesis, considerably augmented, became a true angiotenic fever.‡ 2d. The diathesis not having been calmed, from a want of perseverance in the use of aqueous, acidulated, and mucilaginous medicaments, at first exploded on the mucous membrane of the pulmonary parenchyma. The patient then found himself in that inflammatory susceptibility which we have recognised as common to individuals consumed by hectic. The phlogosis was thence communicated to the inferior portion of the digestive mucous membrane, as it was in that part incessantly irritated and harassed by the presence of badly digested excrements disposed to putrefaction. Finally, the portion of this membrane which lines the stomach was the last, and as if by propagation, to receive the inflammatory action.§ A multitude of examples lead me to believe, that if, instead of moderate stimulants, recourse had been had to the most active, the phlogosis would have exploded on this spot, instead of commencing in the lungs, and that instead of a bright red, I should have met with a black colour and sphacelus. (See Case 13.) Since I have felt the necessity of permitting the stomach to remain quiet in obstinate intermittents, I no longer meet with those enormous gastric disorganizations, except in patients who come under my care after having been unskilfully treated, according to the stimulating method.

I have previously discussed these febrile actions without ap-

* I have said that the gastro-mucous membrane was.

† From the effect of the gastro-enteritis, which did not subside during the apyrexia.

‡ That is, continued acute gastro-enteritis.

§ The phlegmasia has only become more intense.

parent cause, which do not resemble the continued fevers of nosologists. It results from the new facts that I have observed, that if they be not perseveringly treated by negative medicaments, they finish by a phlogistic explosion, which in a few days destroys the principal viscera, and more especially those of digestion,* which are the immediate receptacle of every thing injurious that may be swallowed. The feeling of debility of which these patients incessantly complain, and their paleness and emaciation ought not to make the practitioner vary his treatment. If he has drawn a good diagnosis, if he is well assured that no organ is suffering, and that no moral cause secretly foment the disease, he may hope to effect a cure by the proposed plan, at least it is that which appears to me subject to the fewest inconveniences; for, since I have practised in Italy, I have pretty frequently met with these cases. I believe they are allied to what authors have designated under the name of *heating*, (*echauffement*,) a disease too much neglected by modern writers.†

It is now evident, what I mean by *inflammatory diathesis*, and the wide extent I give to this word. I will recapitulate to avoid any misunderstanding.

Every individual in whom the circulation is more accelerated, and the sensibility more active than in his habitual state of good health, whatever may be the cause that stimulates him, will readily have a phlogosis in the spot that may be the most irritated.‡ The longer he remains in this forced state of excitation, the more readily will a local inflammation be induced, and the sooner will the disorganization of the inflamed part take place. It is this state which I call *inflammatory diathesis*.

Intermittents do not generally present it; but when it complicates them, the febrifuge treatment should never be employed before the sedative and cooling. The freshness of the colour, the frequency and elasticity of the pulse, (it is not necessary that it should be large and full,) sufficiently reveal it; the sensibility of the lungs to cold air, of the stomach to exciting drinks, the pleasure derived from those of an opposite quality are rational

* Which also experience only an increase of phlogosis.

† It is also a gastritis.

‡ There was already one, since there was fever, and it was seated in the gastric passages.

signs, which joined to the preceding, will always suffice to place a practitioner in the right road.*

The following case is an example of these obstinate intermittent fevers, in which the susceptibility of the viscera required to be managed.

CASE XXIII.—*Intermittent fever with phlogosis of the viscera of the thorax and abdomen.*—Humbert, sergeant in the ninety-second regiment, aged from thirty-two to thirty-four years, very light complexion, tall, slender, flabby, entered my wards in the hospital of Udine, the 10th of May, 1806, for a tertian fever, which had existed for four days only. The apyrexia was perfect and undisturbed; no sign of inflammatory diathesis.

I first put him on the bitters, which had no effect. I employed the bark in four drachm doses; the fever became quotidian.† I immediately increased the dose to an ounce and a half, and successively diminished it, till it was reduced to a drachm, a plan I had heard recommended by distinguished physicians. The paroxysms lost scarcely any of their intensity; the abdomen swelled and became hard; the stomach was painful, and the patient grew weaker. Still believing that I must combat the febrile type by stimulants, I substituted opium, ether, the aromatic cordials for the bark, or combined them with this medicament. The appetite and the forces declined, the stomach and bowels refused all tonics; it was requisite to adopt another course. I attacked the paroxysms by gelatine, both alone and with aromatics, dissolved in a decoction of bark, &c.; he took from four to six ounces of it a day. At the same time I gave him sweetened wine, weakened with a solution of gum arabic. The fever ceased; the œdema which had declared itself, diminished; the appetite and strength returned to add to my hopes.

I arrived at this desired point after two months and a half of the most active treatment, and congratulated myself on my perseverance; but suddenly there was a return of the quotidian paroxysms, without chills, a slight cough, colics, and derangement of the alvine excretions. I then gave draughts with canella and

* These signs perfectly indicate the seat of the phlogosis.

† A new conversion of an intermittent gastritis into a continued.

bark to sustain the forces, &c. At first he appeared to regain a little strength, and his œdema subsided; but suddenly his forces failed; I perceived dyspnœa, a slight icterous suffusion, the diarrhœa recurred with violence, the marasmus increased; the dyspnœa and anxiety changed into a painful agony of forty-eight hours duration, which carried him off before he had reached the last stage of extenuation. He died after three months and some days of disease.*

AUTOPSY.—*Habitude.* Infiltration moderate, in some of the cells there was an effusion of blood. *Head.* Slight serous exudation in the different folds of the arachnoid. *Thorax.* The left side hardened throughout. *Abdomen.* Gelatinous, whitish serosity in the peritoneum. This membrane red in a multitude of places, as well over the stomach as over the intestines, thickened, easily detached from the muscles, and reduced into cellular and reddish laminæ. The mucous membrane red and thickened in the stomach, healthy in the small intestines, inflamed and studded with small round ulcers throughout the whole colon; the epiploic cells filled with gelatine; the spleen very large.

Observations.—I might cite other victims of bark, and of the exciting and perturbing method in obstinate fevers, in subjects with sensitive viscera, if I wished to draw my examples from the practice of others; but obliged to give credence to patients as to every thing that passed before I saw them, I was afraid of exaggerating the dangers of the treatment properly speaking, in not sufficiently taking into account the imprudences of the patients themselves, which they too often concealed; I have therefore preferred to give the result of my own practice.

It will be said that Humbert died because the febrifuges could not controul the febrile action; I suspect rather that he died because the febrifuges had been too lavishly given. I wish that this opinion was that of all practitioners. There are some intermittents which bark cannot cure, and which, in most cases, are fatal in military hospitals. If, instead of attributing it to an obstinacy of character, which he cannot explain, the physician would ascribe it only to the too great sensibility and tendency to phlogosis of the viscera, perhaps he would always have hit upon the true cause; but at all events, he would have discovered a mode

* This fact requires no commentary.

of effecting a multitude of cures, which otherwise would escape him.

Whenever the tonic febrifuges render the stomach heavy and sensitive, the abdomen hard, constipated, or relaxed, if the fever has not terminated, it should be attributed to a morbid susceptibility of the digestive passages, which is not as yet phlogosis, but will become so, when the forces shall have been weakened by the febrile paroxysms; and from the moment this phlogosis shall be decided, the death of the patient may be predicted with certainty. But I am of opinion, that this state of aptitude to phlegmasia, which I shall still term *inflammatory diathesis*, existed for more than two months in Humbert.

I would repeat, that permanent excitation of the arterial system is not the only index which can indicate its existence to us; we must also seek for one in the viscera which obstinately reject the use of irritants; it is then purely nervous and capillary. But what is this but saying, except that it is more moderate than in the cases where the frequency and hardness of the pulse renders it more manifest.*

I also dare to state, that phlogosis, properly speaking, (or the progress towards disorganization, the result of a better characterized localization,) had not really existed in each visceral apparatus of Humbert, until the epoch when its function appeared to be particularly deranged; hence, the cough announced it in the lungs; the derangements in digestion, the transitory diarrhœas, and the colics in the colon; the hardness and sensibility to the touch of the abdomen, in the peritoneum.

The practitioner should never forget that the inflammatory diathesis may last a long time, for if disheartened at not having obtained a prompt effect from the demulcent diet and relaxants, he tries tonics, he will see the sensibility become concentrated, and the fluids, suddenly drawn to the most feeble and irritated point, irremediably disorganize it. But as the digestive canal is the general receptacle of medicinal substances, it is but too common to see it become the seat of these actions. As it is necessary to forewarn the physician against this hesitation, which the complaints of patients always tend to increase, I will detail a

* Another germ of my present opinions; certainly nosography would never have taken advantage of it.

case in which medicine will be seen to struggle for a long time against the inflammatory diathesis, triumph over it with great difficulty, and at last obliged to yield from certain foreign influences, which, in a few hours destroyed all the good it had obtained with so much labour.

CASE XXIV.—*Intermittent fever, followed by an inflammatory diathesis, terminated by a phlogistic disorganization of the abdominal viscera.*—Nollot, grenadier in the ninth regiment of infantry of the line, aged about twenty-three years, native of Paris, hair and complexion brown, tolerably large, but of a rounded form, and extreme sensibility, was received into the hospital of Udine, on the thirty-ninth day of a quotidian fever, for which he had already been treated in another hospital. The paroxysms were remarkable for a very long and violent convulsive chill, accompanied with much trembling and anxiety, during which, the face appeared to me much altered. The pyrexia was complete.

This nervous character induced me to combat the fever at once; bark, at first given in six drachm doses, gradually diminished to one, succeeded in removing the paroxysms in twelve days; but some frequency of the pulse, accompanied with febrile heat, and a commencement of appetite, apprised me that it was time to relinquish the Peruvian bark.—I, therefore, confined him to mucilaginous potions, made slightly aromatic, and to farinaceous and light food.

The fourteenth day after his admission, the 10th of September, 1806, the fifty-third day of the disease, Nollot complained of a slight sore throat, and the vault of the palate appeared somewhat red. Demulcents and some diminution of food removed this symptom, and the agitation of the pulse appeared less. The abdomen remained tumid and sluggish.—(Rhubarb and manna.)—The effect was good, the heat diminished, the patient felt easy, the frequency was not perceptible except in the evening. The strength, however, did not increase, which emboldened me to administer some light aromatic infusions, and a little sweetened wine, which, moreover, he was very solicitous for. Eight days passed without any change.

The 18th of September, the sixty-first day, spontaneous vomiting of mucous and bilious matters. Acceleration of the pulse,

with an acrid heat, of which the patient was not sensible. Acidulated mucilaginous drinks.—Strict attention to regimen. I promptly succeeded in removing this extraordinary reâction.—Same state as before. As he was much harassed by insomnia, and his restless and sensitive character rendered it of more importance, some grains of opium were judged necessary. A dryness of mouth with thirst soon resulted from it, which induced me to relinquish it, and return to the acidulated drinks. I could entertain no doubt as to the extreme irritability of the stomach.

The 25th of September, the sixty-eighth day, a slight cold appeared, which occasioned but little change in the progress of the disease. Persistence in the use of demulcents and of farinaceous and muco-saccharine food. His state now appeared to be stationary. Although he began his meals with appetite, he could not eat above a quarter of his allowance; a sensation of fullness in the gastric region prevented it, and if he attempted to persevere, nausea obliged him to stop. Except this, no decided pain, no uneasiness, moderate paleness, no appearance of marasmus, but no augmentation of the forces. Until the beginning of October, the pulse was always quick, especially in the evening, without heat of skin.

The 4th of October, his strength having somewhat increased, I permitted him to walk about. In the evening, frequency of pulse, heat of skin, uneasiness. The next day, every thing again quiet. On the 10th, he found his strength greatly improved.

The 19th, the ninety-second day, Nollot already bearing a three-quarter's allowance, asked his discharge. I was unwilling to grant it to him, and only consented, to obviate the ennui, with which he said he was overwhelmed in the hospital. He had no sooner eaten a full allowance than he found himself unwell, and in the evening was seized with a violent chill, followed by a strongly marked heat. His dismissal was indefinitely postponed. The paroxysm returned eight times. But finally it yielded to regimen, and aromatic mucilaginous drinks, rendered anodyne by laudanum. I was careful to allow him no bark.

Nollot remained as before, with a slight frequency of pulse in the evening. The constipation and slight elevation of the abdomen remained. Perseverance in the demulcent, slightly antispasmodic and aromatic treatment, to prevent the return of the paroxysms.

Finally, the 2d of November, the hundred and fifth day, Nollot left the hospital, believing that he had recovered his health, proposing to strictly follow a mild and nourishing regimen. I exempted him from all duty. He appeared to me recovered, except the sensibility of the gastric passages; but I saw no manifest phlogosis, and hoped as much from the open air as I feared the ennui of a longer residence in the wards.

The 19th of November, Nollot returned, with a violent diarrhœa, which he attributed to some fresh pork he had eaten the day after his dismissal, and to a night he had passed in a stable exposed to the cold and damp. The stools were eight in the twenty-four hours, very copious, without pain or fever; the pulse was rather slow than quick. Paleness, discoloration, anorexia.

The mucilaginous potions with laudanum, rice-water and gruel for his sole nourishment, soon reduced the stools to two or three, and restored his former appetite to Nollot. Hope began to re-animate his countenance.

Nevertheless, the diarrhœa did not yield; the stools, although seldom and without pain, became extremely abundant, the cheeks sunk in, the *embonpoint* disappeared, the voice became feeble. It was necessary to give more powerful tonics. The decoction of oak bark, that of cinchona, with wine and laudanum, rice-water with wine, generous wine sweetened, appear to me to be indicated no longer as curative means, but as palliatives calculated to diminish the feeling of uneasiness, anxiety, and depression, which accompanies the too rapid loss of the forces. Those medicaments at first reduced the stools to a single evacuation daily, and led the dying patient to believe that he still had some vigour.

But this alleviation was short; on the 27th of November, the alvine evacuations became as abundant as formerly, and the marasmus made fearful progress; coldness, slowness of pulse, apyrexia; in vain were the tonics doubled and tripled the succeeding days; the patient was so enfeebled by the abundance of the alvine excretions, that he peaceably expired without agony on the 4th of December, 1806. As the diarrhœa had been without fever, the marasmus had not produced extenuation of the muscles.

AUTOPSY.—*Habitude*. Absence of fat, muscles still tolerably large, but pale; no œdema. *Thorax*. Every thing natural. *Abdomen*. Tolerably deep redness and swelling of the mucous

membrane of the stomach, which, however, was not contracted; redness of the small intestines, especially of the ileum; redness, blackness, with isolated ulcerations of the mucous membrane of the colon. In approaching the rectum, the phlogosis and disorganization were more marked. The serous membrane itself was thickened, and the whole of the intestine gangrenous and tender; the serous membrane appeared every where rugose, reddish, or blackish, even on the liver and bladder; but its greatest disorganization was observable in the colon. No effusion in the cavity; the parenchyma of the viscera not altered in their organization.

Observations.—In this case an inflammatory diathesis is evident, which appeared to have been dissipated at the end of a hundred and a few days, and which would infallibly have been so if the patient had remained longer in the hospital, or if, on leaving it, he had followed the same regimen until the restoration of his forces. It was then only that the organs would have lost their susceptibility to phlogosis; this susceptibility was already much less, since it permitted a more complete nutrition and an augmentation of the forces; but it still lasted, since a too stimulating meal, and the action of cold sufficed to develope an inflammation which had not hitherto existed.*

It is clear, from the details of this disease, that the stomach was too easily stimulated; but nothing before the dismissal of the patient could have given rise to an apprehension of the mucous discharge from the lower portion of the digestive tube.† This confirms what I advanced on the disposition of all the body to phlogosis during the inflammatory diathesis.

Among the causes which may produce it, I believe atmospheric heat and the impression of dry air ought to be placed in the first rank. It appears to me that the climate of Italy exercises on us French a stimulating action, to which all individuals do not readily become habituated. Those who, to a vivid sensibility join a very excitable sanguine apparatus, and closely connected with the nervous, often presented to me, after a short residence at Friuli, that particular state in which I thought I could perceive

* It had existed, but not in the grade in which authors are in the habit of representing it.

† The phlegmasia of the colon, which could not exist without diarrhœa, is much more easy to recognise than gastro-enteritis, which may take place without pain or vomiting.

an unusual acceleration of all the organic actions, and an unfortunate disposition to local phlogoses, which manifested themselves in every spot to which irritants were applied.

The summer of 1807, when the heat was extreme, occasioned us a great number of diarrhœas, and many gastrites at Udine, which I treated more boldly than the preceding year, by strict regimen and the mucilages. I never obtained so much success.*

A great number of soldiers entered the hospital, presenting no other symptom than an excessive sensibility of the stomach, without any signs of what is termed *saburra*. To restore their strength and appetite, it was only necessary to make them fast and to give them lemonade.

Several like Nollot had a frequent pulse, without heat of skin; but many had not this symptom. Then the repugnance for food was sufficient for me, and if it was sometimes wanting, for prejudice often makes us mistake our sensations, the bad effect of these substances served as a basis for my diagnosis.

I thought I remarked that the common wines are not proper for irritable stomachs, on account of the abundance of their colouring principle, which induced me to order several patients to weaken it much with water, and it agreed with them all. Finally, I never again met with so much difficulty to overcome the inflammatory diathesis, or the phlogistic susceptibility, as was presented by Nollot, since I have not been afraid to weaken patients too much, by depriving them wholly and suddenly of tonics. They become weaker, it is true, by this plan; but the appetite revives, and soon forces you to grant more food to them than to those whom you have always kept on a few tonics, for fear of debilitating them too much.

If the stimulants were so dangerous to Nollot, in whom no partial irritation was sufficiently marked to merit the name of phlogosis, how much more injurious must they be when the inflammatory diathesis of the viscera has assumed the characters of a phlogistic localization? The case I am about to give will demonstrate this fact, and will prove to us, at the same time, that stimulants are as much to be feared in diarrhœas complicated

* The more this treatment is generalized, the more success will be obtained, with a few exceptions.

with intermittent fever, as when they are simple, and that gastric irritations are as analogous to each other as the pectoral.

CASE XXV.—*Chronic diarrhœa, following intermittent fever.*—Leuca, aged twenty-nine years, dark complexion, large, muscular and robust, had the fever for three months during the summer of 1806, at Udine; it was treated by bark, wine, and bitter decoctions. He had at the same time a slight diarrhœa without pain, which produced two to three stools in the twenty-four hours. He was finally dismissed, apparently cured, but two days afterwards the diarrhœa returned so suddenly, that he was unable to reach a close stool in time. He was obliged to reënter, and was placed in my wards.

This diarrhœa lasted fifteen days, almost without pain, but debilitating the patient much, who, nevertheless, did not spare tonics, as well to comfort himself, as to check the discharge from his bowels. As he observed that I kept dysenteric patients on a rigid diet, he was careful not to avow his disease. He complained of nothing except that he did not regain his strength, and constantly demonstrated a great appetite; finally, the violence of the pains in his abdomen forced him to a confession.

I immediately put him on the mucilaginous treatment, but all was in vain; he scarcely left the close stool when he was obliged to return to it; every thing he swallowed was rendered in a few minutes by the anus.* The anxiety was intolerable, the pulse small, contracted, and rapid, the heat ardent, the breath and perspiration of an unequivocally stercoral fetor, the features horribly altered.

Three days of this violent erythism sufficed to destroy all the energy of the sanguine system; after which, the skin remained cold, the pulse small and almost imperceptible; immediately afterwards the pain subsided, the patient fell into a desperate state of prostration, having involuntary evacuations; he became extenuated with such rapidity, that in eight days he passed from a tolerably athletic condition to the last stage of marasmus. Finally, he died on the 2d of December, after several days of coma and almost of insensibility.

* It is in these cases that leeches to the anus do wonders.

The total duration of the disease was four months; the subject lived a month from the first exasperation of the diarrhœa, and sixteen days after the second, which was that in which the appetite failed, the colics redoubled, and the febrile action was excited. This action only lasted from seven to eight days.

AUTOPSY.—This presented us with a phlogosis of the whole of the mucous membrane of the gastric passages; slight and limited to a bright red in the stomach and small intestines, it assumed a dark and violet colour in the colon, the internal surface of which was every where thickened, rugose, ulcerated, and sphacelated.

Observations.—We do not discuss whether the diarrhœa was owing to the fever, or to febrifuges erroneously applied to a mucous surface, suffering from the inflammatory diathesis. It is sufficient to have remarked how injurious the tonics, astringents, and animal food were to the mucous phlogosis, at a time too, when the patient already debilitated, appeared rather to require tonics than relaxants. I would also notice the epoch of the last exasperation with fever and loss of appetite, as it was also that of the occurrence of the inflammation of the stomach.

The relation of dysenteric phlogosis with excitants of the alimentary passages, whether medicinal or nutritive, will, perhaps, be more evident in the following case.

CASE XXVI.—*Quotidian fever with dysentery.*—Laon, aged twenty-four years, a Belgian, hussar in the sixth regiment, large, chest well developed, extremities rather slender, hair chestnut, entered the hospital of Udine the 4th of August, 1806, having been attacked twelve days previously with quotidian fever. Some symptoms of gastric irritation induced me to commence the treatment with an emetic, which I followed by aqueous and relaxing drinks. Afterwards thinking him prepared for the bark, I gave him that medicine, which immediately suppressed the paroxysms.

Having wished to continue it in small doses, as a preservative, I perceived a sensibility of stomach, and a disposition to diarrhœa, which obliged me to discontinue it. He had not taken it more than five or six days. I flattered myself with calming the irritation with mucilaginous drinks; but whether I was not sufficiently rigid as to regimen, or whether the appetite of the patient

led him to procure food clandestinely, (I think I might attribute it to both causes,) the diarrhœa did not entirely cease.

It was unattended with pain, not copious, and without fever, when the patient was kept on broth, rice, or gruel; but as soon as to satisfy him, (the German soldiers are voracious, even in the agonies of death,) I augmented the quantity of his food, the stools became more abundant, there were colics and febrile action in the evening. These alternations took place three or four times during twenty days.

The forty-fifth day, the quotidian fever recurred with as much energy as at first. At the same time the diarrhœa became painful, bloody, and accompanied with tenesmus. I had recourse to anodyne potions and farinaceous drinks, especially rice-water. At the end of five or six days the intermittent paroxysms ceased to be remarkable. The dysenteric pains subsided, all febrile action appeared to have ceased. It was the calm of exhaustion. Laon lived for six days still, almost without suffering, not going more than three or four times a day to the close stool. During this interval, he fell into a state of stupidity and coma, with dilatation of the pupils, and rolling of the globe of the eye, which indicated to me a complication of a cerebral affection, a precursor of death, which took place the 23d of September, the fifty-seventh day.

AUTOPSY.—*Habitude.* Extreme emaciation without infiltration. *Head.* Much serosity in the ventricles and cerebral fossæ. *Thorax.* Lungs collapsed, leaving a vacuum, and without engorgement, a proof of the most perfect integrity. *Heart* healthy. *Abdomen.* A somewhat gelatinous serosity of a soapy appearance in the peritoneum; both the omentums filled with a yellowish lymph instead of fat. The whole colon red, brown, black, sphacelated in several places, and tearing on being touched towards its lower extremity. Its mucous membrane was not ulcerated; it was thickened, black, and had a gangrenous odour. That of the small intestines somewhat red, but their other membranes tolerably healthy. They contained some lumbrici. The internal surface of the stomach slightly injected and rugose.

Observations.—I do not pretend to justify the treatment I employed for Laon. Too much imbued with vulgar principles, I was not yet, at that epoch, satisfied of the consequences of diet in convalescence. That kind of demand of nature which leads

the patient to ask for food with so much importunity, appeared to me ought to be listened to; I did not then dare to persevere in a severe diet, except in those in whom the diarrhœa was primitive. A prompt recovery appeared to me here the best means of preventing the return of the paroxysms of fever.

This example contributed not a little to demonstrate to me, that tonics do not strengthen, when the mucous membrane of the gastric passages is too irritable, and that no convalescence presents an exception to this great law. Other facts have taught me to proportion the food to the powers of the organs which receive it.

These two cases show, that from the calmest and most moderate diarrhœa to the most terrible dysenteric phlogosis, there is but one step, and that readily taken; that this is also true of diarrhœas which succeed to fevers, as those which are primitive; finally, that the organic derangements are absolutely the same in all cases.

The following case will demonstrate that a diarrhœa, constantly without fever or pain, following an intermittent fever, depends as much on phlogosis of the colon, as primitive apyrexia diarrhœa, and as that which succeeds to an acute disease.

CASE XXVII.—*Chronic diarrhœa following intermittent fever.*—Monguet, a young man of twenty-four years of age, light hair, skin white and delicate, rounded and graceful form, was attacked, the 9th of August, 1807; with a tertian fever. Having entered the hospital of Palma-Nuova, he was successively transferred to those of Udine, Treviso, and Vicenza, remaining but a few days in either of them. The bark removed his fever, but the fatigues attendant on his transfers always occasioned a reëappearance of it. Finally, believing himself radically cured at Vicenza, he rejoined his corps at Udine. He no sooner arrived there, than a diarrhœa with frequent stools, but without pain, obliged him to enter the hospital, where he was placed in my wards on the 20th of October.

I treated him with mucilages, anodynes, and rice-water; but as he had a great appetite, the principal part of the treatment was neglected. It is so difficult to persuade a patient who loses his strength and preserves his appetite, that abstinence is his best remedy! Thirty-five days of diarrhœa, of four or five stools a

day, always without tenesmus, colics, or fever, finally produced the last stage of marasmus in Monguet. He expired after a long agony, with rare and convulsive respiration. The breath and perspiration for a long time had been of a strongly-marked stercoral odour.

AUTOPSY.—It manifested no other local disorder than a considerable development of the mucous membrane of the colon, which was swelled, black, ulcerated, with loss of substance in its whole thickness in a great number of places. Besides this, the body was thin, discoloured, and slightly infiltrated.

Observations.—If this case be compared with other dysenteries, either primitive, or supervening on continued fevers, phlogosis of the chest, or others that I have detailed in the course of this work, general results will be found which may account for this variety of apyrexia diarrhœa, and give us the advantage of classing it in such a manner that its diagnosis will become easier, and its treatment more rational and successful. Although my plan obliges me to reserve these results for the general history, I cannot help availing myself of them now to institute an instructive comparison; they recal to us that phlogosis of the mucous membrane of the large intestines may last for a great length of time, and occasion but little pain in delicate subjects of a flabby and relaxed tissue, not very high colour, very energetic sanguine apparatus, or obtuse sensibility. We also know that cold and humid situations, are those where these conditions are found the most readily united. In opposite circumstances, diarrhœa presents itself with all the characters which authors assign to dysentery. Heat above all appears to be the cause which gives it the greatest intensity. In Friuli, the dysenteries were more violent in the same patients than in Holland or Germany. In Istria and Dalmatia they acquired a still higher degree of activity, still in the same patients. Dysentery made the greatest ravages in such of our regiments, as leaving the cold mountains of Carinthia, were sent to Capo d'Istria or into Dalmatia. The mortality was so great, for some time, that this dysentery might have been thought quite different from that we treated at Udine, nevertheless it was the same. Several physicians and surgeons who practised in these epidemics, told me that the disease commenced with symptoms of the most violent inflammation, as fever, tenesmus, and bloody dejections. M. Gardeur, a surgeon-major of

distinguished zeal and capacity, who made several post mortem examinations at Capo d'Istria, assured me that he had generally found the colon entirely sphacelated in dysenteric patients, and as easy to tear as it was in Laon and several others I have cited.

I conclude from this, first, that the phlogosis was oftener in its highest degree of intensity in these countries, than in those in which I practised medicine; secondly, I see the same morbid action there which must be constantly modified by the same means. In fact, M. Chabert, at this time surgeon-major of hospitals to the army of Italy,* has seen, whilst he was attached to the sixtieth regiment of the line, in Dalmatia, a small regimental hospital, where the dysentery was combated by nothing but rice-water, or the solution of gum arabic. Fatal terminations were rare, whilst patients from the same corps, who entered the hospitals, most generally perished.

Whence did this difference arise? It is evident that the treatment must have had much to do with it; if another cause existed, it could only depend on a complication with contagious typhus, which never fails to appear where there are great assemblages of men or animals. But it is not the less true, that the emollient treatment, being from my experience, that which abridges dysenteries in the greatest degree, it will also be the most expeditious mode of preventing contagion in epidemics of this disease, as it will prevent the wards from being crowded more efficaciously than any other.

I shall limit the cases of fatal gastritis and enteritis to this small number, because the other cases I have collected of these diseases, and which terminated similarly, were completely subordinate to the former, and presented no new or instructive details; besides, whatever they offered that was peculiar, will find a place in the general history, which, as usual, I will sedulously establish on every thing I have seen in the form of disease under consideration, without, however, prejudging such cases as I have not yet observed. Nevertheless, I dare to hope that they may all, if they have been well appreciated, be enrolled among my own, without creating any real contradiction, and without condemning the principles on which I found the theory† I am about to develope

* He has now retired.

† For an explanation of the word *theory*, and for the idea I think ought to be attached to it, see the preface to the first edition.

CHAPTER II.

*General History of Phlogoses of the Mucous Membrane of the Digestive Passages.**Etiology.*

THE phlogoses of the mucous membrane of the digestive passages in general, are produced by all excitations, whose principal action is upon this membrane. These excitations result from the impression of external agents, and may be referred, 1st, to the atmosphere; 2d, to the food. There are others resulting from a disease antecedent to the phlogoses;* they may be considered as sometimes constitutional predispositions, at others, as exciting causes.

As there exists some differences between the causes that affect more particularly the one or the other extremity of the digestive canal, we will first examine those which are peculiar to gastritis, and afterwards inquire in what they differ from those which more especially act upon the mucous membrane of the colon.

Causes of Gastritis.

These may be divided into predisposing and exciting, although their mode of action is always the same.

Predisposing causes.—The external agents which predispose the mucous membrane of the stomach to inflammation, are those whose constant action tends to accumulate susceptibility in it: some act upon the whole organism at the same time, as atmospheric heat; others first concentrate their action upon the mucous membrane itself; but these causes also augment secondarily the susceptibility of every part of the body; such are certain aliments which possess the property of developing in our economy a higher degree of action than is necessary for the maintenance of the general harmony.

a. Predisposing causes which act upon the whole system.—The qualities of the air which render us most susceptible to im-

* It is also necessary to take into account some moral affections.

pressions, are heat and electricity. Let us examine first, the general effects of heat and electricity upon living bodies. We will afterwards inquire how these effects are modified by moisture.

It is universally admitted that caloric increases the susceptibility and disposition to reaction in living bodies. The organs upon which these irritants act, are more acutely sensible, and react more energetically in warm than in cold weather. But what is this reaction? It is an accumulation of sensibility, of motion, and of fluids in the part that reacts. I will ask then whether an organ is ever nearer to inflammation than when it is thus modified: heat is therefore a very powerful cause of inflammation.

But it may be objected that I speak in opposition to experience; that phlegmasiæ are the attendants on cold weather, whilst bilious and putrid diseases are the most common effects of warm temperatures. I see that it is necessary to examine this question thoroughly.

The first effect of heat is to accelerate the circulation—to cause the heart to beat more frequently and actively—to impetuously propel the blood into the cranial cavity—to increase the activity of the capillary circulation in general, but especially that of the skin and subcutaneous cellular tissue—and to augment very considerably the irritability of all the nervous extremities or papillæ.

There result from these changes, 1st, on account of the stimulus received by the brain, a feeling of being remarkably well, an increased activity of the passions, decreased power of mind, and augmented muscular power; 2d, in consequence of the augmentation of the quantity of blood in the vessels of the external surface, a diminution of plethora in those of the lungs, and more abundant cutaneous evacuations.

A limit is necessary in all things: if this universal stimulus be not carried too far, it very powerfully favours the development of the body, and the individual acquires, if other circumstances concur, the highest degree of vigour, of which he may be susceptible.

But if this excitation continually increases, it finally exhausts the reaction. After enormous deperditions, a sensation of indisposition and general fatigue supervenes; the susceptibility from being exercised, is ultimately worn out; all the functions are performed in a languishing manner, and the individual wastes away and dies before the ordinary term of life of his species.

But this increasing and decreasing movement of vital energy, from the effect of heat, supposes that no untoward accident occurs; for it is clear that a person cannot arrive at the period of fatigue and exhaustion, before having passed through that of excitement and vigour. Well! if he be taken sick in the first, he will have a disease depending on too violent a reâction; whilst in the second, every thing will announce the languor of the forces, in his morbid affections.

Here is again a truth to which every body will assent; but the period at which the depression commences will not be agreed to. Indeed, some persons will think themselves exhausted by a few days of heats and sweats; their physician will think so too, and will commit very gross blunders if they happen to be taken ill.

But this is not yet sufficient: when it shall be granted that the exhaustion does not result until after some time from the effect of the heats, and that a strong man who has sweated and been fatigued for many weeks, or even months under a burning sun, may still enjoy good health under an antiphlogistic regimen, if he be seized with a violent fever, I will demand another thing. I wish it to be admitted, that he may require similar measures in a condition very analogous to the last degree of asthenia to which he may be conducted by the heat. The development of this latter proposition directly leads me to my object.

The inflammatory diseases which heat will produce, when acting upon the sanguineous system, will be phrensies, universal inflammations of the skin, and anginose affections. The circulation in these affections will be very active, the heat considerable, and every symptom will announce an increase of vitality. But these are not the only diseases which heat produces. The brain becomes inflamed, because the stimulus of caloric fatigues it too much, or because its proper tissue is too actively disturbed by sensations of unusual activity. The skin becomes inflamed because the sun scorches it, or because it is forced to a too precipitate secretion, and too powerfully attracts the blood into its tissue; but do not the organs of the thorax and abdomen become inflamed? Certainly, if they be particularly excited by any cause. The lungs being relieved by the afflux of blood into the cutaneous vessels, there is no longer any cause for their becoming inflamed. Phlogosis most frequently commences in its mucous membrane. But the secretion of this membrane is al-

ways diminishing in proportion as the action of the skin is increased; and as it is not irritated by any foreign body. The lungs will not then be subject to inflammation, at least to primitive.

The case is very different with the organs of digestion. It is very true that the afflux of fluids towards the exterior, tends to unload their capillary tissue; but it is equally certain that the heat has considerably augmented the susceptibility of the numerous papillæ spread over the tissue of their mucous membrane, as is proved by the following facts:—These papillæ are very disagreeably affected by irritating articles which act pleasantly on them in cold weather, as alcohol, heating wines, and animal food. They testify pleasure on articles of opposite properties being placed in contact with them, as water, acids, and vegetables; but if, notwithstanding this aversion, the membrane be obstinately irritated before its susceptibility has diminished, an increased action is kept up, which degenerates into phlogosis. Moreover, by persevering in this injudicious stimulation, an inflammatory modification may be kept up in the capillaries of the mucous membrane, or a disposition to the production of this phenomenon, when even the forces are about to become exhausted. It may also happen, that this disposition will be stronger the weaker the individual is. At other times this prolonged excitation, which threatens inflammation, keeps up the general susceptibility, although the vital forces and fluids go on diminishing; or rather, in other words, it makes the susceptibility survive the strength, two properties that exist simultaneously at the period of vigour of which we have spoken.

I am sensible it will be objected to this that it is very surprising that a similar mechanism for the production of inflammatory gastric affections should not have been sooner developed, and that so many illustrious physicians should see only debility or the predominance of bile in the diseases of the digestive tube, during summer and in hot countries. To this I answer:

For a long time it has been the custom to seek for the characters of inflammation in the organs where it occurs with most violence, and the study of its slight shades has been neglected. Thus, in surgery we set out from phlegmon, and in medicine, from peripneumony, to determine the degree of inflammation of the different tissues. It is from these notions that the theory has been

established, which it is time that the physiological doctrine should place in its proper light. Peripneumonies being produced by cold, and these diseases causing a very vigorous pulse, exceedingly intense heat, and very high colour, it has been said that the cold season is that of inflammatory diseases. On the contrary, the strength being locked up in gastric phlogosis and dysenteries, which are the effect of atmospheric heat, it is imagined that debility has established its empire in warm countries. On the other hand, the alvine evacuations, the mucous discharges that accompany them, and the superabundance of the biliary secretion, another necessary effect of irritation of the mucous membrane, have given birth to humoral theories which have become respectable from being consecrated by distinguished men.

However, it will still be demanded of me whether it is absolutely necessary to bestow the name of phlegmasia upon chronic irritations of the gastric passages, with languor of the economy, in warm countries, and how I conceive that the debility produced by the heat favours these inflammations.

1st. Every irritation, whatever be its degree, must be termed phlegmasia, when it accumulates the fluids to any extent in the capillaries, when they tend to disorder, to exhaust, or to destroy the vital energy of the individual by the pain, since these *localizations* are formed by the same laws as those which are commonly denominated inflammations. This is proved by the fatal gastric phlegmasiæ which I have just related. 2d. It is also necessary to give them this epithet, in order to treat them properly: this will be proved by the cases and conclusions which I reserve until I come to consider the treatment.

Now, the following is the manner in which I conceive that the debility produced by heat disposes to phlogosis.

An inflammation, whatever may be its exciting cause, always arises from an increased local action. In fact, whether the phlegmasiæ be excited by an alternate sympathy which forces the organ to a supplementary action, as when the mucous membrane of the lungs inflames in supplying the functions of the skin; or when they result from an immediate stimulation, as we know that poisons may produce gastritis, we see there, at first, exaltation of local susceptibility, and in consequence, accelerated action, accumulation of fluids, and augmentation of temperature. The vital phenomena are here then in excess. But what is this,

if it be not to say, that the vital chemistry is performed with greater activity than in the rest of the living machine? Are not caloric and moisture the two causes which accelerate the play of chemical affinities? Are they not also the supporters of inflammation? Do we not see that external agents which contract the vessels and repel the fluids, as the astringents, are the enemies of inflammation, whilst those which are capable of inducing it, possess the property of accumulating the fluids in the sanguine vessels of the part to which they are applied: such are all the rubefacients and vesicatories? But how can we conceive of their being able to do so, if not by tending to combine with our organs, or with our fluids, and by establishing in them chemical conditions inimical to life, whence results reaction, that is, an augmentation of sensibility and an afflux of vital fluids?

It is then not surprising that atmospheric heat, which accumulates the blood and the sensibility in the membranes composed of nervous papillæ and sanguine capillaries, which by this disposes the molecules of the fluids and even those of the solids, to new chemical combinations, as is proved by the speedy putrefaction of animals dead from heat; it is not then surprising, I say, that caloric causes a continual reaction of the vital principle for the maintenance of constitutional chemical laws. But if in this predisposition the membranes are acted upon by a new external rubefacient agent, it is again very evident that the phenomenon of inflammation will be developed in it with the greatest facility.

But it will be asked, is force necessary for inflammation?

No, I answer, it is not so much so as is imagined. It is a false notion, suggested by the habit of taking as the type of inflammation, phlogoses of the lungs and phlegmon. I will say further: the debility and lassitude of an organ which has for a length of time struggled against a stimulus scarcely perceived by the animal centre, and which, from that even, would promptly obey the laws of brute chemistry, if life cease an instant to be sustained, are very favourable conditions for the development of inflammation. In the discussion into which I have already entered, I have supported this opinion with all the facts which meditation has suggested to me, and I have proved that inflammation depended on the extreme susceptibility of arterial capillaries, which very often coëxists with debility.

The action of electricity upon animal bodies, should be ex-

plained, as regards inflammation, absolutely in the same manner as that of caloric. Perhaps the first of these principles modifies it also in another way, but it is nevertheless certain that it does so in the same manner as caloric.

1st. *Electricity augments the general susceptibility.*—All pains are aggravated or renewed in stormy weather, and the uneasiness is sometimes insupportable in feeble and infirm persons.

Paralyzed limbs recover motion and sensation, on being placed in an artificial electric atmosphere.

2d. *It accelerates the circulation of the blood and quickens the oscillations of the sanguine capillaries.*—The pulse is accelerated in the electric bath; the head becomes hot and painful; hæmorrhages and apoplexies supervene. Inflammations of wounds revive.

3d. *It leaves after death very little irritability in the fibres, and the body is strongly disposed to putrefy.*—This is very constantly observed in animals killed by an electric shock. On the other hand, have not the experiments of M. de la Roche proved that irritability is extinct in the fibres of animals who die from the effect of too elevated a temperature.

It is then, 1st, a too highly energetic stimulant of the sanguine capillaries; 2d, it quickens the susceptibility of the nervous papillæ; 3d, it augments too much the actions of vital chemistry, and disposes to the dissociation of the united actions of the body; that caloric and atmospheric electricity render the internal surface of the alimentary canal very susceptible of being phlogosed by the stimulus of topical irritants.

The moisture contained in a warm atmosphere gives to it peculiar properties. It is known that warm and moist countries are more unhealthy than those which are warm and dry; but the water contained in the atmosphere is never pure. It is necessary then to keep in mind the mixture of other foreign bodies. I shall do this in developing the causes of enteritis, which is more dependent upon moist heat than the phlogosis of which I am now treating. All that I can at present add, is that water mixed with warm air renders heat more difficult to be supported, favours sweating,* and must consequently hasten the period of exhaustion,

* See the beautiful experiments of M. de la Roche on heat applied to living animals.

which always succeeds to that of increase of energy in men who are for a long time exposed to the action of warm air, after leaving a more temperate atmosphere. Moisture mixed with warm air may so abridge the period of excitement, that general inflammatory diseases may become very rare, and the partial phlogoses commence only with the characters of the chronic state: it is this which renders them so frequently misunderstood.

b. Predisposing causes which act directly upon the mucous membrane of the stomach.—The causes which predispose the stomach to become phlogosed by acting directly upon the mucous membrane, are stimulating articles, swallowed either for nourishment or for any other purpose. The power with which these causes act is in proportion to the activity of the preceding causes; the former alone may produce the disease, whilst atmospheric influences do not develope it without their aid.

If men always took care to diminish the quantity of excitants applied to their gastric passages, in proportion as the stomach acquired a greater liability to be affected during summer and in warm countries, until they became acclimated, they would always avoid phlogosis; but this precaution is not taken except by a small number of individuals. Every one knows the necessity of refreshing himself with aqueous drinks, in that painful state which accompanies a heating digestion; but when they are at table they never think of preventing it; they are unwilling to retrench at all their habits; take the same quantity of food, of spices, of wine, of coffee, of liquor, as when they lived in a frozen zone, or as if they had a phlegmatic and not as yet excited stomach. The prejudice is even so powerful, that this regimen is thought necessary to resist the influence of heat, which it is as it were echoed, weakens the tone of the stomach. If a person were able, he would quench his thirst with spirituous liquors, when three or four hours after an incendiary repast, he becomes tormented by a burning heat: happily nature, always the strongest, obliges us to quiet this importunate thirst with cooling fluids, and in this way the antidote is always opposed to the poison.

Fortunate are the temperaments that are sufficiently vigorous to sport for a long time with their digestive powers! for vigour is one of the means of resisting inflammation; but still more fortunate are those whose sluggish and apathetic constitutions ren-

ders them insensible to the effect of stimulants! Habit, again, comes to the aid of many, and those who come off conquerors in this dangerous contest encourage others to follow their footsteps.

But all are not equally fortunate; there always remain upon the field some victims; the disease selects them from among strong as well as from feeble subjects. Among the strong it prefers dark-complexioned, dry, irritable individuals, and those whose passions are readily aroused, those for example whose anger readily becomes furious, and in the same way with their other moral affections. In proportion to the rapidity with which the organic actions may pass from the lowest to the most elevated degree of tone, (which is a great prerogative of organization,) will be the power of excitants to inflame and disorganize the tissues.

It selects among feeble individuals, those who are slender, rather tall than large, irritable and nervous, and all those whose passions are stronger than their temperament, to use a vulgar expression, and some melancholic persons, whose sombre thoughts keep their epigastrium constantly in a state of painful constriction. It spares the sanguineous, whose body is large and well expanded, notwithstanding the activity of their circulation, and fierceness of their passions; stout athletic men, whose motions are slow and powerful, especially such as are light-complexioned, approaching to ash-colour; delicate, unsteady, and sensitive persons, but who are flabby and little capable of enduring fatiguing exercises. Females who have the temperament of their sex, and infants are not attacked, unless from an abuse of the determining causes, which should never be met with among them.

All persons predisposed by their complexion, and by the atmospheric influences which we have just specified, will be easily affected with gastritis, if their stomach be frequently irritated by a certain order of *ingesta*; such as, 1st, among solid food, black meats, game, certain very ammoniacal and very putrescible fish, ragouts very highly spiced and seasoned with sauces, rendered acrid by the extractive part of the meat, and by oils and burnt fat, mushrooms, the alliacea, and all heating and cruciferous roots, mustard, and finally, all culinary preparations having a pungent and high flavour; 2d, among the drinks we will indicate alcohol as the most irritating and inflammatory. This article will be more active also, if taken warm—thus punch and burnt brandy

ought to be regarded as true poisons, if they are taken for any length of time. Of the wines, those which are altered by the addition of metallic salts, rendered heating by alcohol, or having too much red colouring matter, have also the effect of exasperating the gastric sensibility: as sugar and heat increase the power of wine, the addition of toast will more certainly produce the effect in question.

There is another class of direct excitants of the gastric passages, from which the most sober and temperate persons cannot always refrain, although they do not constitute our food. These are stimulating and rubefacient medicines of various powers, habitually taken under the name of *stomachics*; such as elixirs and tinctures, &c. or under the specious title of aperients, deobstruents, dissolvents, correctors of phlegm, &c. in the form of powders, opiates, pills, &c.

The long-continued action of all these excitants insensibly augments the susceptibility of the internal membrane of the gastric passages, and especially that of the stomach, rendering the capillary circulation in these parts more active, promoting the determination of fluids to them, and finally disposing them to inflammation.

It is useless to add, that all these causes are the more active in proportion as the patient's constitution is nearer to that above described.

The moral affections which keep the mind in an habitual state of sadness, also give a new degree of energy to the external agents we have just noticed.

Exciting Causes.

All those which we have just enumerated may, by a continuance of their action, produce phlogosis of the stomach; but it is most frequently excited by some excess in food or drink, or by a transport of anger. The corrosive poisons, contusions, falls, and blows on the epigastrium, which can excite gastritis when there is no predisposition, will certainly develope it with more energy when the patients shall have been prepared for it. Finally, emetics and purgatives indiscreetly administered, when the predisposition has attained its highest degree, rarely fail to excite the disease. There are some lesions of functions which render the stomach more susceptible of being phlogosed under

the influence of different irritants; such are, in general, chronic inflammations of other organs. As this cause has more to do with enteritis than with gastritis, we shall here merely allude to it.

Causes of Enteritis.

We will study these in the same order as we have done those of chronic gastritis.

Predisposing Causes.

The causes which predispose the superior portion of the mucous membrane of the digestive canal to phlogosis, may act with equal certainty upon its inferior part.

All those which are connected with regimen, less readily produce enteritis than gastritis; but they may all give rise to the former disease. Food of bad quality, as unripe fruit and grain, and those which are altered by mixture with foreign substances, or are spoiled by moisture, are of all the ingesta those which most frequently produce the dysenteric phlogosis; but they do not cause it to prevail epidemically except under certain rare circumstances. In fact, these circumstances cannot occur in civil life, except during sieges, in times of great scarcity, during long droughts, and other public calamities. Soldiers will, at first sight, appear more exposed to these, on account of the uniformity of their nourishment; but as care is ordinarily taken to furnish them with food of good quality, they do not suffer from bad regimen, except under the circumstances of which we have just spoken, as also affecting civilians, and in some unusual expeditions. In these same cases, causes dependent upon atmospheric influence have still more to do with the epidemic character of dysenteries than regimen properly so called; we shall illustrate this in treating of this influence.

Dry heat and atmospheric electricity dispose as well to enteritis as to gastritis. I have said that they greatly augmented the irritability of the mucous membrane of the digestive organs. During the dry heats of 1807, we received into the hospital at Udine, a great number of dysenteric patients; and in general all our patients were attacked with colic, and menaced with diarrhœa whenever they made several successive meals upon meat. Although the debility had much to do with the imperfect digestion of the food, it required also that the putrid residue should

find the mucous membrane very susceptible, in order to excite thus easily inflammation of it. The disposition to phlogosis of the mucous membrane, and this phlogosis itself, may then coincide with debility. But all this may be the effect of dry heat. This heat is then also, as well a cause of dysentery as of gastritis.

But moist heat, which disposes much less the gastric mucous membrane to phlogosis, seems to act more energetically upon that of the colon. All authors who have written upon dysentery, have placed warm and moist air at the head of the causes of this disease. I have also observed that dysenteries predominate over gastritis in warm and moist temperatures.

The water then, with which the atmosphere is saturated, has a peculiar irritating action upon the internal membrane of the colon: this is doubtless from its being in a state of decomposition from the effect of the heat. But do not the noxious properties of warm and moist air arise rather from some particles not belonging to the water, and mixed with it? A warm atmosphere charged with pure water is rare, unless formed artificially, as in a vapour bath. Moist air is always impregnated with foreign bodies, and the warmer it is, the more of these does it contain. Let us see to what species of air the production of dysentery may be attributed.

The atmosphere of ships, of hospitals, of barracks, of camps, of all places where numbers of living creatures are collected together, in a word, in all close places where any organized bodies and their excrementitious deposits are in a state of decomposition; this atmosphere, I say, is capable of disposing the mucous membrane of the intestines to phlogoses, in proportion to its temperature and humidity. Does not this arise from the water and caloric, which are the two most powerful agents of decomposition, having surcharged this air with particles set free by the fermentation of the putrescible bodies of which we have just spoken?

Another fact confirmative of this last is, that this air tends as well to produce putrid, malignant, and intermittent fevers as dysentery.* If it does not always produce the same diseases, this depends upon the variety of its combinations. For example, if the particles which it contains arise particularly from fermented vege-

* This should be the case, since fevers are gastro-enterites.

tables, such as those from marshes, it tends to produce intermittent fevers.* Charged with a greater number of animal particles, it engenders continued fevers of a bad character. What is the combination which renders it most apt to produce phlogosis of the colon? I dare not decide this question. Perhaps the evaporation from filth, from cloacæ, from excrements of all kinds, more particularly enjoys this property, and in this case, the action of these miasms must be considerably augmented by heat and moisture.

That no doubt may remain respecting the impression of putrid air in general upon the digestive canal, it may be remembered that the putrid air of hospitals, especially if cleanliness is not rigidly attended to, disagreeably affects the fauces, produces an uneasy sensation in the abdomen, and even colics; that all fetid exhalations have the same action upon us; that many students of anatomy are harassed with diarrhœa when they commence to frequent dissecting rooms. I have often experienced uneasiness in the abdomen on opening bodies which disease had strongly disposed to become putrid. I have frequently known young military *officiers de Santé*, complain of the same sensation during the time they spent in the wards.†

In all these circumstances the putrid particles are directly applied to the mucous membrane of the digestive passages, being swallowed with the saliva, the secretion of which they even promote.‡

It is known that dysenteries produced by the influence of vitiated air, may appear epidemic and even contagious, when a great number of individuals are submitted to the action of the same causes. "The dysentery was so contagious," says M. Gil-

* This is the opinion of Cullen and some others; but the fact is, that the intermittent type depends most frequently upon alternations of heat and cold, and the moisture adds to their power.

† This is the infection of which every body now speaks.

‡ From this proposition to that which attributes typhus fevers to a phlegmasia of the mucous membrane of the digestive canal, there is but one step: thus physicians the most distinguished for judgment and the talent of induction, have concluded from this work that adynamic fevers and all those of bad character are gastro-enterites. I have cited the remarkable phrase of Dr. Girardot; and since this, Dr. Dubreuil, professor of surgery, anatomy and physiology, at the marine school of health at Toulon, has given after the history of phlegmasiæ, the name of gastro-enterite to yellow fever, in a memoir which he wrote without being acquainted with the first edition of my *Examination of Medical Doctrines*.

bert, (*Tableau des Maladies internes de mauvais caractère qui ont régné dans la grande armée pendant la campagne de Prusse et de Pologne*,) that the medical officers contracted it from the close examination of the stools." Nevertheless, this prompt action of contagion is rare in dysentery, and is never un-mixed; for the miasms arising from the assemblage, and the excretions of dysenteric patients do not invariably produce the disease; they more frequently engender typhus when they are concentrated in a close atmosphere. It should then be admitted that the contagion of dysentery, as well as that of intermittent fevers, is less than that of typhus, which is the last result of the increase of activity of all the putrid foci; or rather in other words, dysentery arises rather from weak and isolated putrid foci, than from extensive ones. But if dysenteric patients be collected together, great foci will then be produced; dysentery will never result from them without the concomitance of malignant fever. It is then impossible to have strong contagion of dysentery without a combination of this fever.

This difference can arise only from the degree of activity or of the assimilating power of the miasms which are exhaled from these different foci. In fact, there is in the propagation of dysenteries by the moist and infectious air of small foci but a modification of the digestive mucous membrane which predisposes it to phlogosis; and for the phlogosis to be produced, there is commonly necessary, 1st, an individual predisposition; 2d, the action of an efficient cause with a certain degree of energy. The necessity for these two conditions demonstrates the slight relative activity of the focus productive of epidemic dysentery, at least most commonly. The contrary is observed in typhus and in plague. These diseases give out much more powerful miasms, and which may most frequently reproduce the morbid affection, without the aid of the predisposition and efficient causes, or at least which produce it, although both these are very slight. It is then solely from the activity of the miasms and the power they possess of developing the disease from which they arise,* by their own force, in individuals who are least exposed to them, that the con-

* This is contagion. For seven years I have carefully developed the action of these two causes, in my course of lectures: the latter is now called *infection* and the former contagion.

tagion of every morbid affection depends. But, since dysentery does not possess these two properties except in a slight degree, it ought to be considered as but little contagious, even when most manifestly epidemic.* It is the opinion of those authors who have most weight, that this disease is not truly contagious except when complicated with typhus.

Moist and cold air disposes the mucous membrane of the colon to phlogosis, much less than moist and warm air, and this is favourable to the reasons we have just offered respecting the mode of action of this latter. All physicians who have travelled in different latitudes know that dysentery is properly the disease of the inhabitants of northern countries, removed to tropical regions. Nevertheless cold, and especially cold and moist air, although much less charged with this description of foreign bodies, which we have recognised as possessing the property of preparing the mucous membrane of the colon to phlogosis, does sometimes contain a sufficiency to produce this effect. It suffices for this, that its temperature should be something above the freezing point. In this case, its manner of acting connects it also with that of warm and moist air.

But cold air, supersaturated with water, also predisposes the membrane of which we have just spoken to phlogosis in many other ways: 1st, by presenting an obstacle to the general transpiration, which sympathetically determines, in the mucous apparatus of the internal surface of the colon, an increase of action destined to supply the cutaneous evacuation. The action of cold upon all the internal surfaces should be thus explained.

The retrocession of cutaneous diseases appears to me to act in the same manner as suppression of the transpiration. As cold almost always produces the repercussive action, I place this cause with the preceding, when it acts only by predisposing the mucous membrane to phlogosis: if it produces phlogosis itself, it then becomes one of the efficient causes. Therefore I shall not say any thing more on the subject.

2d. Moist cold acts also by enfeebling the general system, and more particularly the mucous membrane of the intestinal canal, whence result imperfect digestion, and a less resistance on the

* Dysentery produces gastro-enteritis or typhus by infection, like all putrid exhalations.

part of this membrane to the irritating and deleterious action of the excrementitial residue, then more abundant and putrid.

3d. By giving to the food injurious properties, rendering it watery, fermented, but little nutritious; this cause acts like the preceding.

To this class of causes should be referred the dysenteries which are met with in cold, marshy, and foggy countries; in ships under certain circumstances; in cold and damp prisons, and in some countries after rainy seasons which have produced in the grain injurious properties.

These dysenteries often coëxist with scurvy, the etiology of which is explained in the same manner; they are less formidable and less contagious than those which depend upon warm and moist air.

The readiness with which the mucous membrane of the colon is disposed to phlogoses, or is even phlogosed by the above mentioned causes, is in proportion to the feebleness and excitability of the individuals upon which these causes act. The coëxistence of these two states is so adapted to dysentery, that it appears to me to furnish alone the constitutional predisposition.

I have not remarked that dysentery principally prefers certain *innate temperaments*, but I have always observed that it selects those subjects in whom weakness and exhaustion of the materials of life are united with much excitability. It is this *accidental temperament*, if I may thus express myself, which appears to me most readily to predispose to dysentery, from the action of the causes which I have enumerated.

Every thing then which tends to produce this temperament should be considered as adjuvant to these same causes. The want of sufficient nourishment for the necessities of nutrition appears to me to powerfully concur in it, and when grief and fever are combined with this cause in soldiers, dysentery makes great havoc among them.

Persons who have habitually indigestion and diarrhœa, those who cannot bear the pleasures of the table without being exceedingly excited, should fear dysentery, and in proportion to the length of time that their health has been deranged. Persons weakened by any chronic disease are disposed to it, but more so in hospitals than elsewhere. Such among these as suffer from pain or fever will contract it more readily than the others. Thus

the wounded whose wounds are painful and supply for resorption an irritating pus, and the phthisical in whom hectic fever is rapid in its march, will rather have the diarrhœa termed *colliquative*, than their comrade affected with the same disease, but who is wasting away in a calm apyrexia.

Exciting Causes.

Every person who has been disposed to phlogosis of the internal membrane of the colon in the way we have indicated, may experience its first attacks without the supervention of any new cause, and by the simple continuation of the action of the predisposing. In these cases, the disease is developed and increased most frequently in a slow and obscure manner, and has, thus to speak, from its commencement the chronic character.

But still more frequently, dysentery is excited by artificially exciting drinks, of any description; by water containing noxious, metallic, or other particles; by animal food; by all aliments ill digested, whether on account of their bad quality or their quantity, finally by all the residue of digestion, which is not promptly enough deprived of its moisture by the absorbent action of the lacteals. These residual matters, abandoned to chemical laws, in contact with a surface endowed with exquisite vitality, force it to continual reâction, which finally excites phlogosis in it.

As this cause is incessantly in action, thanks to our intemperance and to the fear we have of dying from deficiency of vital energy, diarrhœa is perpetually produced in a number of persons who might be easily preserved from it, if they would moderate their excitability, or spare themselves an increase of irritation, when some cause maintains it in spite of them. I have elsewhere said that a suitable regimen would preserve phthisical patients from diarrhœa. And it is this experience, frequently repeated, which proves my proposition.

Violent affections of the mind, may unquestionably, suddenly excite the disease which here engages our attention.

A sudden and copious secretion of bile, as in critical efforts, the stagnation of this humour in the intestinal canal, the decomposition which it suffers in consequence of its too great quantity, are causes of dysentery; but they confound themselves with the primary irritation of the mucous surface, because the secretion of bile

is often excited by this irritation.—When moral affections or acute diseases produce a bilious flux, it is then very difficult to determine whether the morbid influence has not acted rather upon the intestinal canal itself, than upon the liver. For myself, I believe that the first impression is felt, in this case, in some point of the alimentary canal, between the stomach and anus.

Worms have been considered as an exciting cause of intestinal phlogoses. Most frequently they are only the product of the affection, because phlogosis increases the quantity of mucus which nourishes them. However, if they were primarily cherished by the residue of digestion, and by glairy matter dependent upon relaxation, they might become the first cause of a phlogosis of the mucous membrane. In all cases they cannot but augment it by a kind of *vellication* which they exercise on the internal surface of the digestive passages.

Sometimes, during the continuance or at the termination of continued fevers, there occurs an afflux of humours to the mucous surface of the intestines, which cannot be always regarded as the result of the bilious secretion alone: it appears that the serous fluid transpires abundantly through the tissue of the membrane, and that it concurs with the bile, the pancreatic fluid, and the mucus of the cryptæ, in the abundant evacuations which take place. A localization dependent on the same cause, might result in a hæmorrhage equally arising from the perversion of the action of the exhalent vessels. All these immoderate actions have a tendency to be prolonged and converted into true phlogoses, if they are kept up by too stimulating *ingesta*, such as those we have already enumerated; or they may become the exciting cause of the most violent phlegmasiæ, if the surface of the part is prepared for it by these same *ingesta*.

DEVELOPMENT OF THE CHARACTERISTIC SYMPTOMS OF PHLEGMASIÆ OF THE MUCOUS MEMBRANE OF THE DIGESTIVE PASSAGES.

As the phlogoses of the superior portion of this membrane have, besides common characters, some very prominently peculiar features, we will commence our examination with gastritis.

I. *Gastritis.*

Persons in whom gastritis is announced by preliminary symptoms, first experience during digestion, heat in the region of the stomach: at its commencement this heat is agreeable, and is accompanied with a sensation of health and of muscular power. When the stomach is entirely emptied, this sensation disappears, and the appetite far from being diminished, seems to have acquired additional energy.

After the continuance of these preliminary symptoms for many weeks, or even months, according to the intensity of the causes, the individuals perceive that this heat becomes inconvenient, and that it is sympathetically repeated in the skin, which is dry and rough. Their mouth is dry and hot, and they have slight soreness of the throat, insomnia, agitation, heats and pains in the head. They begin to feel an aversion for animal food and spirituous drinks. Some have a burning thirst. Certain individuals still preserve at this stage of the disease, the feeling of considerable strength, and a propensity for many kinds of excess: I have seen the appetite very energetic on the very day even of the explosion of the disease.

Gastritis has two principal forms; one acute, the other chronic: they appear subordinate to the temperament.*

Acute Gastritis.

Acute gastritis is sometimes ushered in by symptoms of the most violent cholera morbus, and which too often do not differ from those of this disease. The patient constantly vomits every thing he swallows; afterwards bilious mucous, and bloody matters, and he has incessant discharges from his bowels. Fever is necessarily present. At other times gastritis commences without vomiting, but still with a violent fever, which as I have observed is not preceded by a chill.† The patients complain of a sharp, uneasy, internal sensation of heat; there is most commonly pain in the pharynx. The tongue is red, clean, or covered with mu-

* Or at least to the actual state of the forces or of the susceptibility of the individual; for a person often loses the susceptibility to acute phlegmasiæ after having several times been affected with them. An individual has but few attacks of acute gastritis in the course of his life, and he is sometimes tormented for a very long time with chronic gastritis under different forms.

† I still limit gastritis too much. Does not the chill often attend the commencement of acute gastro-enteritis?

cus, and very liable to become dry, when the individual has been some time without drinking; considerable thirst, desire for cold and acidulated drinks, disgust at all others, and even vomiting, when lemonade or analogous drinks are not allowed to the patient. There is constipation if the mucous membrane of the intestines is not disorganized, or if it is less violently affected than that of the stomach; there is diarrhœa with tenesmus if that of the colon is the principal seat of the irritation.* There is often pain in the epigastrium and hypochondrium, particularly on the right side. These pains are deep-seated, and are not aggravated by the touch, especially those of the hypochondriæ, unless when forcibly pressed.† They are often lancinating and accompanied with a sensation of constriction. They manifestly diminish after the patient has swallowed cold, aqueous, and especially acidulated drinks.

The vomiting which ushers in the disease often ceases after a few days, although the other symptoms continue. At other times it continues, or supervenes during the course of the disease, and the patients complain of a continual nausea, as if provoked by a globular body which has a tendency to rise and painfully compresses the base of the chest. Every attack of vomiting is followed by relief, which is not of long continuance, and the patient incessantly demands emetics. (I give notice that this symptom is more common in peritonitis than in acute gastritis.)

The absolute impossibility of deglutition, which the patient attributes to an obstacle at the bottom of the pharynx or at the top of the sternum, should be regarded as a higher degree of intensity, since it teaches us that the stomach violently contracted is so irritable, that it will not admit of any dilatation. Finally, the discharge of worms by the mouth will not surprise those who are acquainted with the mechanism of their generation.

Such are the signs which may be derived from the examination of the function of digestion. But many of them may be wanting. The principal, or the pain, does not exist in some cases of gastritis, even the most intense. But as the diagnosis cannot

* Certainly, for irritation of the small intestines alone does not produce diarrhœa.

† They are often stronger in the muscles which correspond to the stomach, than in this organ, and are augmented by pressure, and even by the slightest touch.

be formed except by comparison, great attention must be given to the sympathetic disorders.

The sympathetic disorders which accompany acute phlogosis of the gastric passages are, 1st, *as regards the head, the functions of sense, and the movements of the muscles submitted to the will.* Cephalalgia may exist, but it is not essential. Aberrations of judgment, transient at first and corresponding to the period when the sufferings are most acute; afterwards constant, so long as it does not cause the patient any distractions, may appear to mark more distinctly the character of this phlogosis.

I have seen patients as completely delirious as in the most intense ataxic fever,* or in phrensy. The analogy is the greater, as they have at the same time the conjunctiva red, the eyes inflamed, and the expression of the face altered. Sometimes the delirium is attended with sallies of gaiety; this occurs when the gastritis is unattended with pain: most frequently the violence of the pain renders the patient absent, morose and impatient. As the disease advances and the sufferings increase, the patient becomes more and more insensible, until finally coma comes on.

At the same time irregular contractions of the muscles of the face, grinding of the teeth, subsultus tendinum, and repeated convulsive movements are observed. The patients throw off the bed-clothes, whilst their senses remain; they say that the heat which consumes them is a thousand times more insupportable when their chest is covered. If local applications are employed and kept on by bandages, the patients remove them. They incessantly change their position; frequently sigh, and their countenance is expressive of the most acute suffering. If they be interrogated respecting the nature and seat of their pains, they place their hand near the end of the sternum, but they cannot accurately describe their sufferings. The only very distinct sensation they experience is that of an internal burning. It is solely by a comparison of the different symptoms, and by the instanta-

* I hope hereafter to contribute to fix the meaning of this expression, which in our time, influences the life of men, as much as the term malignant fever did formerly. (*Note to the early editions.*)†

† The substitution of the word *ataxic* for that of *malignant*, has not remedied the inconveniences of this latter, since it has not changed the mode of treatment. It is necessary to unite these pretended essential fevers to the phlegmasiæ, and it is this which has been done in the two *Examinations of Medical Doctrines*.

neous relief which follows the employment of cooling drinks, that it can be determined that all the anxiety is the effect of the phlogosis of the internal surface of the stomach. The muscular force is not destroyed, since in the midst of the overthrow which succeeds the most stormy crises, surprising efforts are seen suddenly developed. This character, joined to the natural state of the colour, will suffice to remove all suspicion of ataxic, or rather typhus fever, the effect of deleterious miasms.*

In the Respiratory Apparatus.—A cough with distinct and separate paroxysms, accompanied with a tearing pain, and clear, mucous, frothy expectoration, streaked with blood, or white and opaque, like that of catarrhs in their last stage, and in peripneumonies at the period of their resolution; general pain in the chest, referred especially to its lower part or to the region of the pylorus, in a word, all places where the pectoral organs correspond to the same points as the stomach; agitated and laborious respiration, when the subjects are large and sanguineous. Aphonia often exists, and depends on a pain or uneasiness of the stomach, which sympathetically paralyses the action of the muscles which modulate the voice.†

Such are the sympathetic derangements which phlogosis of the stomach produces in the respiratory function. These symptoms have no value except when they coincide with those which arise immediately from the diseased organs.

3d. *In the Circulation and Secretions.*—During the early stage of acute gastritis, the pulse is full, hard, and often as large as it would be in the most genuine pneumonia, especially if the pectoral symptoms which we have just enumerated are met with, because these symptoms prove that there is a sanguineous plethora in the capillaries of the pulmonary parenchyma. And it is precisely this coincidence which may lead us to mistake the character of the disease.

* There is no difference between the gastritis here depicted and these fevers, except that which depends upon the degree; for acute gastritis which cannot be arrested, often run on to ataxic or adynamic fever, the symptoms of which do not differ from those of typhus. Besides the gastritis of which we are here treating, is now in the opinion of ontologists an ataxic fever.

† It is the pain or the uneasiness arising from the gastritis, which prevents the will from regulating the respiratory and vocal muscles so as to modulate the articulate sounds.

In the inferior grades of gastritis, and when the forces have been impaired by the pain, the pulse no longer possesses the same consistence: it is corded, convulsive, irregular, and intermittent; it seems as if the artery contracted towards the heart.* In the still less marked degrees and towards the termination of life, it is most frequently absent.

The heat of the skin is considerable in the violence of the acute stage; I have always found it dry and rough. The skin is cold when the disease is in its decline; it is ice-like, and nothing can warm it in the gastrites which slightly approach the chronic form; it always corresponds to the pulse. All the cutaneous excretions are suppressed; the breath is fetid after a few days, when the circulation has been rapid.

Chronic Gastritis.

I call that gastritis chronic, which does not commence with violence, although its course is sometimes as brief as the preceding, because such cases constitute an exception. Moreover, a more attentive examination always shows us that these insidious gastrites which have appeared to be fatal in a few days, had existed for a long time before the patient had applied to his physician. What we have just designated as preliminary symptoms to violent phlogosis should be regarded as the disease itself in this latter case, when we wish to determine its duration.

It is very evident that this difference arises from the subjects being less disposed to acute phlegmasiæ, or from their being organized in such a manner that an apparatus may be destroyed by the phlogosis, without the others, and especially the circulatory apparatus experiencing any great derangement. But this disposition favours the long continuance of the disease, and merits for it the name of *chronic*. It may exist after the violence of the acute stage, when this latter has not been sufficiently violent to be fatal; or has not been properly treated, as it may be primary and independent of all morbid affection. It must also be admitted that the nature of the gastric sufferings, and the obstacles which they present to the regeneration of the blood, are the principal causes of the inaptitude to fever.

* This indicates a convulsive state of the heart, and not a lesion of the arterial tube.

I describe then under the title of *chronic*, all gastrites which are not accompanied with a rapid action of the circulation, and which destroy the springs of life by derangements which are so slight as infallibly not to be recognised unless the greatest attention be paid to them. This work is particularly destined to lay open to view the most transient shades of chronic diseases.

Chronic gastritis is produced in the same manner as the acute; its preliminary symptoms are the same. When the sufferings of the stomach are sufficient to arrest nutrition, more powerfully to injure the forces, and prevent the patient from satisfying his appetite, he pays more attention to it, and consults a physician. If the latter attentively examines his state, he discovers all the symptoms of the acute stage, but in a slighter degree, with some exceptions only. The vital phenomena of it are always presented.

The patient complains of a pain across the bottom of his chest, that is, at the lower part of the hypochondriac regions and at the epigastrium; it is generally more violent on the right side; it is sometimes seated so high up, as to be referred to the chest. This pain is constant and very troublesome; it may be burning, lancinating, sharp, and limited to a very small spot. It easily assumes this latter character when the stomach is filled with acrid and stimulating substances; it is most frequently accompanied with a sensation of constriction. Some patients complain of a sensation of a large round body which compresses the chest upwards; others experience nothing but a sensation of a transverse bar, which obstructs the passage of every thing they swallow, and inspires them with a distaste for food and drinks.

Of all these pains the lancinating and sharp acquire the greatest intensity. The others are obscure, and continue so long in a slight degree, that the patients do not determine to request relief until their strength fails them.

There is always a want of appetite, and in the highest grade of the disease, a universal loathing; but when the appetite still continues, the digestion is very imperfect. The food is commonly vomited a short time after it is taken. The more the patients have eaten, and the more stimulating what they have taken is, the sooner they vomit, which affords them much relief. Those who do not vomit, either because the disease is less intense, or from a peculiar idiosyncrasy of the stomach, are harassed during the whole continuance of digestion in the stomach, by a sensation

of load, nausea, acid and corrosive or nidorous and fetid risings in the stomach, and by rumination; and the gastric pain from which they suffer is aggravated.

Some experience no other disorder except risings from the stomach, agitation, uneasiness and delirium. The pulse increases for some time and the skin is heated: all these are appeased after the digestive process is finished.

For a long time the abdomen is extremely tense. The patients are costive and have not more frequent evacuations than those who are affected by scirrhus of the pylorus. Towards the end there supervenes in the majority a diarrhoea, with colic, tenesmus, and sanguinolent dejections; this is a proof of the extension of the phlogosis; the breath and perspiration then exhale a manifestly stercoral odour.

These sufferings, although not very acute, are always borne with difficulty by the patient; they render him sad, impatient, taciturn, distrustful, and little inclined to enter into the minute detail of his disease.

He has an air of suffering, the face is much wrinkled, the conjunctiva red, the lips and malar eminences of a deep vinous red, inclined towards the colour of the tincture of logwood.

The tongue and the whole inside of the mouth, ordinarily present the same appearance. Nevertheless, on the centre of the tongue there is sometimes observed a kind of mucous crust, dried so as to form a false membrane. I have also met with some patients in whom the tongue was much loaded, and coated with mucus, the breath fetid, and the mouth constantly bitter; but it should be remembered that there is no exclusive symptom, and that the diagnosis cannot be formed except from the ensemble.

As soon as chronic gastritis is well established, the subcutaneous cellular tissue is nearly obliterated, although the volume of the muscles is little diminished; when they are much extenuated, the disease is incurable; but in every degree the skin is tight to the muscles and drawn into their interstices. The cellular tissue is so contracted, that the skin cannot be moved in those places where it is usually very loose. I have not seen this adhesion so marked in any other species of marasmus. If to this character of the skin be added that derived from its colour, (which is always brown, inclining to ochrous, or of the colour of red wine lees,) we shall have the two most constant symptoms of chronic

gastritis. In the advanced stage, the skin is covered with a multitude of points and spots of a very deep vinous red, and even violet. This is a very bad sign.

The chest is not commonly affected. Gastric cough, with slight paroxysms, may be however sometimes remarked; but we must not refer to the lungs, the lancinating and sharp pains, which, shooting from the nervous papillæ of the stomach, contracted and drawn up under the arch of the diaphragm, may extend to the region of the mammæ.

In the commencement of chronic gastritis, the general circulation is not affected so as to produce a sensible febrile action. When the disease has made some progress, the pulse becomes hard and frequent, and at the same time the skin is warm and dry to the touch. There is always an exacerbation in the evening, during which time the patient is restless and uneasy. If this grade continues for some time, the strength is soon exhausted. This gastritis becomes acute. But if the febrile action is marked only by a frequency of the pulse, without heat of skin, or if the patient feels hot but for a few hours towards evening, or during digestion, the disease may continue chronic. In all cases when it is protracted, the febrile action disappears, and the evening exacerbation ceases to be perceptible. At the same time the skin becomes cold and assumes the colour above indicated, finally marasmus becomes more and more marked. When diarrhœa is added to the gastric symptoms, the cessation of the febrile symptoms is more prompt and more complete.*

Thus we are led to the phlogosis of the mucous membrane of the intestines.

Enteritis or Dysentery.

We rarely find in the bodies of those who have died of diarrhœa, signs of phlogosis in that portion of the mucous membrane, which lines the small intestines.† This inflammation is much more frequently observed with gastrites; but most generally

* There are also other grades of chronic gastritis which are indicated in the propositions of the *Examinations of Medical Doctrines*. I refer the reader to them not to multiply repetitions.

† It is found whenever this disease is complicated with acute or chronic gastro-enteritis, and this is common.

when it does exist, the phlegmasia of the mucous membrane extends from the cardiac orifice of the stomach to the anus. It has appeared to me that it rarely commences in this part first, and that it succeeds much more readily to gastritis than to phlegmasia of the colon. Professor Pinel has already remarked that the irritation of the duodenum coincided with that of the stomach in gastric fevers.* I intend then to speak here of inflammation of the mucous membrane of the colon.

This, like the former, may be divided into two great sections, the one acute, the other chronic. We cannot dispense with studying the acute. In fact, the grades of catarrh of the colon which may occur, are so numerous, that nosologists think themselves obliged to separate many of them from the others. It is known how many species of diarrhœa, Sauvage has established. Even in our days these diseases are still too much divided: it was difficult for it to be otherwise before we possessed accounts of a sufficient number of post mortem examinations to be able to compare together the different grades of this disease.

Acute Enteritis.

The phlogosis of the mucous membrane of the colon which I shall call *enteritis*, having been created by the causes previously enumerated, this disease almost always commences, when acute, without any preliminary symptoms. In its highest grade, which is described by all authors under the name of *dysentery*, the patient is suddenly seized with violent tormina, followed by stools at first stercoral, afterwards mucous, bilious, bloody, and at the same time very painful efforts, which are termed tenesmus.

This phlogosis may be very violent, and so acute that in a few days it passes on to gangrene, without any symptom of fever, except an increased frequency of pulse, but without heat of skin. In this grade, vague and continual horripilations with coldness of the extremities occur, rather than a decided chill which marks the moment of the attack. But if the patient is plethoric, vigorous and irritable, a very marked febrile heat, dependent on a reaction

* This observation might serve to determine the true cause of fevers.†

† Doubtless; but it must be said that this irritation is a phlegmasia, and not obstinately, as is done at present, give to the fever which results from it the title of *essential*. What can be henceforth the object of this obstinacy? Is it not censurable, since it prevents this fever being treated as a phlegmasia, and it conceals the true cause of the adynamia, which supervenes in these cases only because the gastro-intestinal inflammation has not been cured?

of a full and free vascular system, succeeds to rigors more or less prolonged from the commencement. The dysentery is then acute and febrile like the gastritis we have first described.*

I will pass over the peculiarities of simple acute dysentery, with or without fever, which it is always easy to recognise. Nor will I say any thing of its complications with continued fevers.† I will content myself with observing that without some one of these complications, dysentery is rarely accompanied with a very marked febrile reaction: then the heat does not continue after the first few days, and commonly nothing is observed but that agitation of the pulse with disposition to chill of which I have spoken, and which I term *fever from pain*. I will first examine the different grades of the chronic state.

Chronic Enteritis.

1st. *Secondary chronic diarrhœa*.—I will place first in order, the better to connect the facts, those which are the sequel of the acute or the dysenteries which have commenced suddenly and violently, with or without marked fever, such as I have just indicated. They are almost always, (I would say always, did I not know that there might coëxist an alteration of some other part than the mucous membrane,) the effect of an ill-directed treatment. These diarrhœas do not merit the name of chronic before the expiration of the known term of phlegmasiæ of the mucous membranes, that is, before twenty to thirty days. But when they have passed this epoch, it appears to me more than probable that they are no longer kept up unless by the improper application of new irritants, that is, by the constantly repeated action of the same causes.

The chronic diarrhœas which are met with subsequent to certain discharges from the bowels occurring during the course of acute fevers, belong in my opinion to the same class as the preceding, for whether the phlogosis of the colon be but a complication determined by certain exterior agents and favoured by the idiosyncrasy, or whether it be a localization of the general actions, su-

* Then there is a complication with enteritis and gastro-entero-colitis: this corresponds to the dysentery with essential fever of authors.

† See the preceding note.

pervening at a period, and under circumstances which justify its being considered as a crisis, it is not less an irritation which, when prolonged beyond a certain period, terminates by disorganizing the part in which it is seated. I will say the same of the chronic diarrhœa which coëxists with an intermittent fever, and of that which complicates the other phlegmasiæ. The greater or less degree of their intensity at their commencement, does not in the least change their nature, if they be considered in the chronic state.

By what fatality then has it happened that these diarrhœas are separated from those which have been slower in developing themselves during the very same phlegmasiæ? If diarrhœa appears with violence during the acute stage of a catarrh or of a peripneumony, it is termed a dysentery, and it is arranged with the principal disease as a complication; if, on the contrary, it supervenes but four or five months later, when the forces are three-fourths consumed, far from according to it the same place, it is made subordinate to the primary affection, of which it is termed a symptom. In my opinion it is always a complication, and I have given the reasons for it in the exposition of the causes, in showing that those which most powerfully favour the production of phlegmasiæ of the colon, viz. the susceptibility, debility, and immediate irritants, act very energetically on phthisical patients, unless they are kept upon a very rigid diet.

This is applicable to all the diarrhœas which complicate the last stage of diseases of debility.*

* The expression symptomatic is the source of a host of therapeutic errors. It is always imperfectly understood and ill applied by physicians of limited intelligence and knowledge; and the most distinguished individuals cannot always preserve themselves from the difficulties into which this expression leads them, I will say as much of the word *nervous*. As soon as a disease becomes a little complicated, the physician relieves himself from embarrassment, by terming the symptoms whose mechanism he does not perceive, *symptomatic nervous affections*, and he persists in the treatment adopted, although it be often contra-indicated by the supposed nervous or symptomatic phenomenon. Hence the viscera are disorganized, and the disease becomes incurable, without the physician having the least suspicion of it.

It is only by comparing the appearances on dissection with the symptoms before death that this too common error can be corrected. When will physicians be convinced that there is no pain in any part which does not depend upon an

All the chronic diarrhœas which we have just indicated may have had for some time at their commencement, certain symptoms sufficiently prominent to be assimilated to idiopathic dysenteries; that is, they may be attended in their commencement with tenesmus and bloody dejections, and even pure blood, and may excite a febrile action, if not already present, as an effect of the primary disease. I have often seen the most violent dysentery suddenly supervene in patients affected with acute fever and aggravate this latter; in patients affected with intermittent fever, and change it immediately into continued; in persons almost enervated by a chronic disease, and develop a febrile reaction necessarily only ephemeral.

But most frequently, the phlogosis of the mucous membrane which produces diarrhœa, does not make its appearance in so striking a manner in persons who are already a prey to another disease. The frequency and copiousness of the dejections are then the sole proofs of its existence. Tenesmus and colics sometimes exist; in some patients they are not found. Most commonly these symptoms appear or disappear, according to the irritating power of the bodies which are admitted upon the inflamed surface.

2d. *Primary chronic diarrhœa*.—Such are the principal features of the history of chronic diarrhœa, which I will term, if I may be allowed, *secondary*. Well! they are all met with in that of primary chronic diarrhœa. A person at the time well, may be exhausted and emaciated by a diarrhœa which commences quietly and without pain, and is prolonged for a longer or shorter period, without causing any considerable disorder in the general harmony, and this diarrhœa is like the others, the effect of a phlogosis of the mucous membrane of the large intestines.

This is the lowest degree of chronicity, that which it is the most important to know well and to connect with the more marked grades in which the phlegmasia is so distinctly marked as to be evident to every one. It corresponds, in all respects, to the chronic gastritis which we have attempted to distinguish. We proceed to make the same attempt as regards this latent phlogosis, in the treatment of which we have discovered many

appreciable alteration, and that the terms *symptomatic* and *nervous*, like the word *hazard*, are but the veils of ignorance, which the interests of humanity and the glory of their profession commands them as soon as possible to rend asunder.

abuses, when conducted in accordance with the most accredited principles.

I have seen in Italy, a great number of persons attacked with diarrhœa, without any other appreciable cause than the influence of climate and irritating indigestible food, and unattended with any inconvenience except some colicky pains preceding each dejection from the bowels. These persons were not prevented by debility and by the painful confinement resulting from the frequency of these stools from being able to attend to their business until after several weeks. So long as they did not change their customary mode of living, the diarrhœa did not cease. It might be prolonged for six months in this way, but it gradually exhausted the patients. If they were dry and irritable; if they suffered from painful spasmodic contractions of the bowels; if they had habitually a contracted and frequent pulse, they fell into a state of marasmus. If they had a laxer and less sensible tissue, which is most commonly the case in persons thus affected with diarrhœa, effusion gradually took place, (I have seen it become enormous,) and they succumbed suddenly, either without a struggle, or in a convulsive and comatose state, when the brain participated in the effusion.

In all analogous cases, when after two or three months continuance, the mucous membrane of the colon is disorganized and ulcerated; when all the fecal matters which arrive at this part promptly putrefy with the mucus, the pus and the discharge from the ulcers; finally, at the period when the disease is incurable, the putrid particles, taken up by the absorbents, are diffused through the system and escape with all the excretions; the breath, the perspiration, and the urine are fetid, but of a stercoral fetor very different from that of phthisical persons and of those exhausted by a large wound; the features, and especially the eyes, change; the complexion assumes a dull and leaden colour; the pulse is small and frequent; the strength rapidly decays, and death is rendered certain.

It is known that during the continuance of a chronic diarrhœa, the patients must experience many changes in the series of symptoms. In all of them a violently exciting and perturbing regimen may suddenly produce tenesmus, bloody stools, and colics. In some, astringents suppress the evacuations, but it is by adding to the phlogosis which from being moist and suppurating becomes

dry, whilst it developes a general reâction resembling continued fevers.*

All these symptoms connect chronic diarrhœa with the acute; but nothing demonstrates more completely their analogy than post mortem examinations, as we shall see directly.

PROGRESS AND DIFFERENT TERMINATIONS OF PHLOGOSES OF THE MUCOUS MEMBRANE OF THE DIGESTIVE PASSAGES.

We have demonstrated, in the etiology, that the inflammation of the mucous membrane of the organs of digestion, like all the others, owes its origin to a too violent organic action: it is only by representing anew this mechanism, that we can give an account of the development of the gastric phlogosis, the external phenomenon of which we have just studied, and of its varieties and its various terminations, which it remains for us to examine.

Mechanism of Gastric Phlogoses.

From some cause irritation is produced and an action excited more active than natural; this action has a tendency to abate after a certain time; but a second and third cause act in succession, further exalting this state of excitement; finally, a stronger impulsion being given, the exaltation of the action is carried so far that there results from it a derangement of the other functions, and then a much longer time is necessary for the excitement to be calmed.

Thus, all inflammations have a determinate duration, but which differs in each temperament. Let us follow up these reflexions by applying them to the digestive mucous membrane to which irritants are immediately applied.

Let us suppose an irritation which has produced an exaltation which cannot be subdued in less than twenty-four hours. If before the end of this period, some new irritants, a copious meal, and heating wines are applied to the suffering part, they will give a new impulsion, which cannot be arrested until after four days.

* It is because tonics have suspended the discharges from the bowels, only by making the irritation predominate, and even by developing phlogosis in the upper portion of the digestive canal. This species of palliation, which procures to the prescribers of tonics a momentary triumph, is commonly fatal to the patient.

However, the patient who is not aware of this law of the economy, will not wait those four days before applying a third cause of excessive excitation. He will not cease to stimulate the sensitive surface until the pain of this part shall so powerfully influence the sensorium as to derange a great many of the functions, and extend the pain through the principal ramifications of the nervous system.

But, in order that the physician who is called in, may judge how great a length of time is required for the painful surface to lose its morbidly increased action, it is necessary that he should calculate the susceptibility of the subject, the intensity of the causes, and that he should know, as far as possible, how often the morbid causes have acted, and the different degrees to which their repeated stimulations have elevated the morbid action: that is, has the patient often experienced gastric heat and pain with loss of digestion and vomiting? Has he allowed these irritations to cease before subjecting himself to having new ones excited? or does not the patient obstinately persist in taking food before his appetite returns and before the cessation of the diarrhœa? Finally, has he been treated by irritants administered too soon after vomiting or after the discharges from his bowels have taken place?

It is from these data that the physician may calculate how long a time the gastric or intestinal irritation will continue. And it is very important that he should calculate accurately; but if he cannot do so, it is necessary at least that he should possess some symptoms by which he can ascertain when the irritation ceases, in order that he may safely invite the surface which is no longer painful, to resume its former functions; for if he is so unfortunate as to do so prematurely, he will continue to furnish causes which will maintain the disease; and it will be kept up in an obscure degree, and one likely to entirely deceive him as to the enemy against which he has to contend.

It is thus that chronic irritations of the digestive passages are perpetuated. So long as this conduct is pursued, the only result that can take place is general exhaustion arising from deficient nutrition, and from a useless development of reâction, which is itself the result of the pain, unless the habit preserves the patient from it.

I leave it now to be determined whether it is easy to decide, *a priori*, respecting the duration of any phlegmasia of a mucous

membrane, in the same manner as that of a wound, of a blister, of a cautery, in short, of all irritations which are seated in a place where external irritants, often identical with those which have caused the disease, may be applied. Practitioners and nosologists have in vain tried to determine the duration of pectoral, uterine, and intestinal catarrhs; they have failed, and always will fail when they attempt to fix the duration of these diseases.*

Neither have they furnished us with any thing satisfactory when they wished to found the distinction between acute and chronic phlegmasiæ upon the number of days these have continued. What I have said respecting phlegmasiæ of the chest may be reviewed on this occasion. But that will not dispense with my investigating here, solely with respect to the digestive mucous membrane, the symptoms which should distinguish the acute from the chronic state.

When irritating causes suddenly exalt the action of the mucous membrane of the stomach or colon, sufficiently for the pain to suspend its functions, to excite actively and destroy the harmony of all its actions; that is, when the gastric or intestinal irritation suddenly becomes sufficiently powerful to produce local pain, vomiting, or diarrhœa and decided fever, *there is acute phlogosis*.

When the irritating causes produce for a long time, only moderate excitement, which does not suspend the gastric functions except for a short time, and call the sympathies into play but slightly, consequently excite but slight derangements in the general harmony, *there is a chronic phlogosis*.

It is evident that the differences are only in degree. In fact, 1st. Suppose powerful causes and an irritable and vigorous subject, you will have suddenly the highest degree of acute phlogosis.

2d. Let a person who is already fatigued by slight previous excitement, be suddenly subjected to the influence of powerful causes, and you will have a less acute phlogosis: such is the individual already affected with gastric disorder or diarrhœa, but not yet exhausted, who is suddenly attacked with cholera or dysentery, in consequence of a debauch, or of having taken an emetic and purgative. How many examples have I not seen of this!

* Here also is one of the germs of the physiological doctrine.

3d. Take an individual who is still more feeble, who may be half exhausted by a fever termed essential, or by hectic, and subject him to the same exciting cause: if it act tolerably energetically, he will have a third degree of gastritis or acute dysentery, the violence of which will be inferior to the two first, and which will be kept up too short a time, sufficiently active, to cause great derangements; that is, this degree will soon tend of itself to a chronic state. This, or even a less degree, is also found in the cases of diarrhœa already prolonged, which although they were unaccompanied with pain, suddenly became so painful as to produce convulsions and death. It evinces itself in the same manner in certain chronic gastrites, which manifest themselves only by anorexia, and constant nausea, and by decay, when an emetic improperly administered excites horrible anxiety and death in convulsions.

4th. Finally, if what I have represented in commencing the development of this mechanism be supposed, that is, a series of excitations always renewed before having time to cease, and especially if this occurs in an individual little capable of supporting excessive actions and violent perturbations, an idea will be formed of the most chronic phlogosis.

The phlogosis which is kept up in the same manner, after having been for some time more or less acute, must be arranged with that which we have just described.

The mechanism of these phlegmasiæ being known, we may, it seems to me, reason upon their tendency, their duration and different terminations, with more confidence than we could do at first.

Duration, tendency, and termination of phlegmasiæ of the mucous membrane of the digestive tube.

The most moderate of the gastric irritations is that which is excited by an ordinary repast. Four, six, or eight hours are sufficient for the stomach to relieve itself of its load, and as soon as it is emptied, the excitation of its internal surface is appeased, and it may without injury be again stimulated. This degree is not yet morbid; but it is with this as with others, which although little alarming at first, merit to be considered as true diseases. Let us follow them to confirmed gastrites.

1st. If a person commits a prolonged debauch, and especially

takes a great deal of animal food and alcoholic liquors, the stomach requires twelve, fifteen, and even twenty-four hours to empty itself; afterwards its mucous membrane remains several hours and sometimes days, heated and irritable, and having a relish only for emollient or sedative liquids.

This is the first degree of phlogosis; it disappears ordinarily of itself, if a meal or at most two be abstained from; but if the same excesses be renewed with as little care, it is more or less prolonged. Habitude which renders the majority of mankind less easily affected, preserves them however from many of the ill consequences which result from irritations too frequently repeated. But this habitude itself has a limit, beyond which stimulants resume their activity.

This very interesting point of doctrine cannot be elucidated but by physiology.

We ought only to observe here that a stomach long stimulated by a too irritating regimen and to which it appears accustomed, sometimes becomes suddenly harassed by it, and a state of phlogosis is manifested. Doubtless the too stimulating chyle which it has furnished has prepared this revolt, by giving in time to the whole system a susceptibility which is constantly increasing. (*See above what I have said of inflammatory diathesis.*)

But when a person possesses one of those fortunate stomachs which accustoms itself to every kind of stimulants, he must still not believe himself invulnerable: for, 2d, if the sensibility of the viscus is exalted by a foreign cause, as heat, a moral affection, or a febrile disposition depending upon an irritation situated elsewhere; or if the stimulants of the gastric passages suddenly acquire a new degree of energy, the irritation of the mucous membrane will manifest itself with all the characters of the phlogosis which we have called *acute*. Then a longer time is required for this membrane to resume its functions; its disorder may have the same duration as other phlegmasiæ, the course of which is not in any way controlled, that is, from ten to twenty days, if it be allowed to terminate unmolested, but if it be fomented, it has no longer a determinate duration.

It will be demanded what is the tendency of the *acute phlogosis* to the degree in which we have represented it. Let us not abuse terms, if it be excessively violent either in its very commencement, or in consequence of injudicious treatment, it may

terminate in from ten to twenty, or even twenty-five days,* by the death of the irritated membrane. For myself I think that except in cases of poisoning and complications of putrid and pestilential virus, phlogosis of the mucous membrane of the stomach and colon has rarely this degree of activity, (I speak of the latitudes in which I have practised.) Most frequently it tends to disappear of itself from the tenth to the twentieth day, and in rather less than half this time it is perfectly extinct.

But I suppose here that it has been properly treated, by always proportioning the stimulants to the irritability of the membrane; for, 3d, if we are too solicitous to force it to resume its functions, or if to provide and relieve a general feeling of debility which is inseparable from this disease, recourse is prematurely had to drinks called *tonic*, the irritation is necessarily prolonged. But as at the same time the powers of the system are consumed as much by the pain as by the want of nutrition, the external symptoms of the disease become less prominent. The sympathies are not called into action except obscurely. The phlogosis is then truly chronic.

How long may it continue thus? This question is already solved. If we irritate much, death, which is inevitable, will occur infinitely sooner. - I cannot determine this period from my experience; it seems to me only from certain comparisons, that it should not extend beyond the fiftieth or sixtieth day in gastritis, and from three to four months in dysentery.

If we irritate slightly, but yet more than is proper, and if we vacillate in the treatment, the irritation has no longer duration than can be *a priori* determined. All depends on the relations between the susceptibility and the individual force of a part on the one hand, and the amount and activity of the irritations on the other. I have seen phlogistic diarrhœas of from seven to eight months duration; there are some gastric sensibilities which although treated by stomachics and irritants of all kinds, did not terminate for several years; but it is evident that a perseverance

* None of these limits are rigorously accurate: the duration of phlegmasiæ varies much according to the intensity and the repetition of the causes, and the dispositions of the patient: but when I wrote this passage, I endeavoured to imitate as far as possible classic authors, who wished to strictly fix the periods, reserving to themselves the right to refer the exceptions to irregularities. This method has long retarded the progress of the science.

in this treatment renders a fatal termination inevitable. I have observed for my part that there is a period beyond which the best directed treatment can no longer prevent the successive degradation of all the functions. Diarrhœas of more than three months continuance, when I have attempted to cure them, have all been fatal. I have cured gastrites which had continued for fifty days, but I am persuaded that it is difficult to cure them when they have been intense at their commencement, after twenty days of bad treatment. For the rest, these points of doctrine merit a more extensive investigation.*

Can it be said that chronic phlogoses become incurable, tend to a fatal termination? I do not think that it is too physiological to say that a phlegmasia tends to produce death. Perturbating actions excited for too long a period in any part of the system, produce disorganization there: from the moment this is consummated there is no longer any safety, but the individual still lives some time; for he does not die until the influence of the organ disorganized and transformed in whole or in part into a foreign body, shall deteriorate all the apparatuses.

Physiology teaches us that the disorganization of the mucous membrane of the stomach is much more promptly fatal than that of the mucous membrane of the colon.† If a diarrhœa from phlogosis can continue eight months, and if the disorganization is accomplished before the third, it is evident that the diseased part has permitted the rest of the system to survive it, in some degree for nearly six months. It cannot be so with the stomach; when its internal surface is incapable of performing its function, life

* Doubtless, and experience has elucidated all these questions. Patients live a shorter time in hospitals, where they respire an atmosphere less vivifying than in private dwellings. There are some who become promptly disorganized in all places, others who have more vitality, and who support phlegmasiæ for a longer time.

† Yes, if the stomach is altered in the greater part of its extent; not if its disorganization is very circumscribed. A person may live a long time with a derangement of this former kind if he is not very irritable, because the healthy portion suffices for nutrition; whilst colitis, by subtracting nourishment from the system more promptly induces consumption. But circumscribed gastrites terminate after a longer or shorter period, either by perforation, which the scirrhus situated beneath the ulcers may however retard, or by the extension of the phlogosis which spreads over the whole stomach, the small intestines, and sometimes other organs.

cannot be prolonged beyond a few days, and if there be pain in the stomach, life may be suddenly extinguished.

When one of the chronic phlogoses which we have just noticed has not yet effected a local disorganization, and a more rational treatment is finally adopted, a cure is certain. But how long a time is necessary to effect it, counting from the moment when the proper practice is adopted? The less emaciated the patient is, the more prompt ought to be the success, because the irritants may be removed more boldly, and the forces will afterwards sooner recover their habitual equilibrium. In three or four days I have seen the two phlogoses now under consideration yield, and the cure be completed in twelve or fifteen. When on the contrary the patient is already almost in a state of marasmus, as when the phlogosis has continued about sixty days, for the two opposite reasons to the preceding, the cure will be longer: the solace will be prompt; but retrogradations or semi-relapses will often occur during the cure, when it is attempted to increase the stimulants. I have sometimes passed more than a month in these painful uncertainties; nevertheless I ultimately succeeded.*

The termination by cure is a resolution. The capillaries less irritated, pour out more abundantly on the surface a white, thick, well-digested fluid, which does not at all stimulate the capillaries. As the capillaries of the crypta are not the only ones to experience the irritation, they are likewise not the only source of the fluid which is spread over the mucous membranes during the continuance of the inflammation. The exhaling orifices of the tissue itself, or of the derma of the membrane, unquestionably furnish it.

When the resolution is complete, exudation speedily diminishes and resumes the characters of the mucus which habitually covers these surfaces.

If the exudation is prolonged by constantly preserving the characters of pus, or even without preserving them, it may be taken for granted that there remains in the capillaries of the membrane a certain degree of irritation, for at the same time we observe that it relieves itself more promptly of foreign bodies.

This is applicable only to the mucous membrane of the colon. As to that of the stomach, which is less abundantly supplied with

* This has happened now and then during some years.

mucus, its phlogosis is rather marked by the tardiness of digestion, than by its increased rapidity,* and vomiting of mucus does not take place except in temperaments in whom the internal membrane of the stomach is as abundantly covered with mucus as that of the nasal fossæ and bronchiæ in many individuals. But this is a vicious constitution; we will also remark that it is little subject to phlogosis.

On the whole, very slow resolution announces itself in the stomach by the tardiness of the digestion and vomitings of alimentary and mucous matters, and in the colon by the unusual liquidity of the stools. It is necessary that these lesions be not accompanied with a progressive diminution of the strength and emaciation; for then it would be a true chronic phlogosis. The degree of the irritation which I endeavour to determine is then below this phlogosis. It deserves to be known, because it is apt to cause a relapse if it be not cured. I will call it *prolonged resolution*.

The terminations of phlogosis of the mucous membrane of the gastro-intestinal canal which are followed by death should be examined in the acute and in the chronic state.

Organic Alterations.

Every phlogosis of the mucous membrane which becomes fatal in its acute stage, exhibits to the anatomist this tissue thickened, dense, of different degrees of redness, and sometimes appears ecchymosed, or entirely black. It is sometimes found eroded, or as if destroyed in small isolated spots, and finally covered or not with an exudation, the consistence of which, and other characters vary very much.

The redness, from the bright rose to the violet, and even black, does not necessarily suppose a disorganization. A very attentive observation has convinced me that patients often expire by the sole effect of the pain, in the commencement, and before the inflamed tissue was disorganized or sensibly altered in its composition. This is the fate of those unfortunate patients whom it is endeavoured to revive by cordials, when the debility which prostrates them is but the consequence of a pain which arrests

* It is so, however, sometimes at its commencement: this constitutes bulimia, a disease which the nosologists have classed among the neuroses.

certain nervous irradiations, whilst it causes a host of others. I have often resuscitated patients who were almost without pulse, delirious, and in a state of tremor approaching the last agony with lemonade; and those whom I have seen succumb in the same state, have frequently exhibited only redness or blackness, without erosion or fetor. When the mucous membrane was dry, or covered with a clear, thick, and puriform mucus, or transformed into a coriaceous membrane, &c. I have regarded these as subordinate to the idiosyncrasy of the inflamed capillaries.*

It will be objected, that patients often do not complain of any pain in the phlogosed part, even when they are a prey to the most terrible anxiety, to fever, to convulsions, and to delirium. I answer, what can excite all these disturbances, if not a morbid modification of the numerous papillæ of the irritated surface? A modification which, continually propagated to the animal centre, is reflected from thence with paroxysms of convulsions which disturb and painfully agitate all the ramifications of the sensitive tree. If these vibrations are not pains, what shall we term them?

I have sometimes found a mucous membrane black, fragile, and of a gangrenous odour, in patients who succumbed rather later, after having passed from restlessness to debility, and with some symptoms of putrid adynamic fever, especially fetor of the

* In my dissertation on hectic fever, I have collected many examples of continued febrile action, occasioned by the continuance of foreign bodies in contact with the mucous membranes of the trachea, bronchia, and stomach. The complete cure of the patients after the removal of the foreign bodies, proves, as I have observed, that mucous membranes, although much irritated, may for a long time resist disorganization. Some more recent facts furnish me with new and very authentic proofs of this.

In the Bulletin of the Society of the Medical School of Paris, for 1807, No. 8, we find an extract from a report of M. Duméril, on many cases of foreign bodies discharged by stool, addressed to the society by Dr. Dupuy, of Saint-Foi-sur-Dordogne. We there find among others the case of a young man, who after having enjoyed good health to the age of twelve years, experienced at this period a sensible emaciation, a frequent and dry cough, and febrile action at night; morning sweats of the neck and chest, which symptoms daily became aggravated, induced fears of phthisis pulmonalis. The patient seemed to be on the verge of the tomb, when he discharged a nut shell, which he remembered to have swallowed twelve or fifteen months before. From this moment the symptoms lost their violence, and the patient was gradually restored to perfect health. This fact is calculated to support the hopes of practitioners in gastritis and enteritis of long duration.

breath.* Here the sphacelus is manifest; but it is not always found in the cases which seem to indicate it most.

It is here also entirely the result of the excessive pain. It occurs in consequence of the patient having resisted his sufferings a sufficient length of time to allow the membrane, the vitality of which is already destroyed by the pain, to become putrid before death, or at least before the post mortem examination. The erosions occur only partially, in the most irritated spots, and seem to be the commencement of ulcers; they belong to all the grades of the acute form. The irritation which worms permanently keep up in certain narrow parts, which are doubtless cryptæ, may sometimes produce these erosions; but I have also met with them without there being any of these animals in the digestive organs.

Thus the terminations of phlogoses of the gastro-intestinal mucous membrane which become fatal in the acute stage are, 1st, a kind of thickening with injection and ecchymosis; 2d, different varieties of exudation which may be compared with suppuration in general; 3d, some loss of substance which I regard as the traces of a commencement of ulceration; 4th, gangrene more or less allied to sphacelus.†

Fatal chronic gastrites have appeared to me to leave disorders in the mucous membrane sometimes different from those which are presented subsequent to dysenteries of the same nature. The chronic gastrites which I have observed in Italy, have exhibited the same lesions of the body as the acute, that is, redness or blackness with thickening, and some erosions. I have never found very distinct ulcers.‡ The redness was less deep than in the acute. The violet or black colour had not the odour of gangrene. The thickening of the membrane was uniform.

The alimentary canal was almost always contracted, so as to contain scarcely any excrementitious matters, and its parietes were every where in contact. When the disease had been very protracted, the emaciation coincided with the state of the constriction, especially in the inferior portion of the tube, which demonstrates the long repose of this portion, at which the stomach

* I had then perceived the connexion of the adynamic symptoms with gastro-enteritis.

† Vegetations are also sometimes found in it.

‡ I had not examined sufficiently close the mucous membrane of the ilium.

scarcely allowed any chymous matters to arrive. The same disorder has been observed by Lorry, in what he calls the dry phthisis of melancholic persons, and by Dr. Tartra, subsequently to poisoning by nitric acid.*

Thus the irritation, in continuing two or three months, and even longer, in this membrane, may not disorganize them in any appreciable degree. Death may then be the simple effect of the exhaustion of the forces, resulting itself from the impediment caused to the first processes of digestion by the pain in the organ, and the derangement which this pain uninterruptedly causes, during a long period in the functions of the other apparatuses. Every thing induces me to adopt this mechanism.

But if the phlogosis of the mucous membrane be kept up for a much longer time than I have known it to be in Italy, for example, for many years; if it should exist in a degree less than that in which I have observed it; if the pain should not be sufficient to exhaust the forces in three, four, or six months; if it should be concentrated in one place, the result would be different. There would be a very appreciable disorganization, manifested after death, by a thickening of many inches in extent, and a blending of tissues to such an extent as to implicate the two other membranes.

Is it not thus that scirrhus of the pylorus, of the cardia, or of other parts, which we have so often seen, are formed? But does not their production also suppose a cause of a nature to affect rather one part of the stomach than another, or one order of capillaries rather than another, for example, the lymphatics? Does not the universal inflammation of the gastric mucous membrane prevent its being concentrated? Is not the pain which accompanies the first the cause of an earlier death than attends scirrhus? Is it not on that account that none of the phlogoses which I have seen in Italy have produced it? But may it not finally occur in certain persons who have had frequent relapses? I would as yet but propose these questions: facts will one day decide them.

Chronic dysenteries always leave after death a thickening of

* After a gastritis of three months duration, Dr. Tartra found the alimentary canal reduced to so small a volume, that a person might, as it were, hold it in the hollow of his hand; the cavity of the intestines, through the whole extent, was not larger than the calibre of a quill; most parts of its cavity was dry and almost obliterated. The stomach was at most not larger than the ordinary size of a small intestine.

the mucous membrane with various shades of redness; but it is rare that we do not meet with a greater or smaller number of ulcerations with sharply elevated and rugose edges, as venereal ulcers are described. The mucous membrane in these places is entirely destroyed, as the muscular layer always forms the base of the ulcer.

An attentive examination of such of these ulcers, as were just commencing, has led me to believe that they originate in the cryptæ or glands which secrete the mucus. Around them the mucous membrane is more thickened than elsewhere, and of a colour which approaches much more to black. The parts where the excrements remain longest, as the cœcum and the inferior half or descending colon are more abundantly supplied with it than the transverse arch. I have found it at the termination of the ileum, but never in the other portions of the canal.

It appears, and Morgagni had observed it, that the ulcerations never occur in the mucous membrane of the large intestines, until after the phlogosis had continued for a long time. May not the stimulus of the excrements upon the weakened membrane be greater in certain parts, and may not the formation of ulcers and the losses of substance be thus explained.

Certainly the most irritated parts lose their vitality, and the putrefactive action which is constantly taking place on the inflamed surface, powerfully contributes to it. Let us endeavour to explain this.

In health, the excrements before they are discharged, are scarcely at all foetid. When the digestion is very perfect and absorption as rapid as it should be, the chyme is in a short time deprived of its aqueous particles, and the mucus does not sufficiently moisten it to prevent decomposition. This process has as yet made but little progress when the excrements are expelled; at the same time the membrane which enjoys considerable vitality, resists the stimulus of these excrements, if by chance they become more putrid than ordinary, and no pathological phenomenon results from it.

If the fœtor continues, the membranes become irritated, reddened, and phlogosis commences, which causes the contractions necessary for the frequent expulsion of the fecal matters. But if these last constantly become putrid on their surface, the parts of the membrane which are most irritated lose their vitality.

These are the mucous cryptæ, because it is in their capillaries that the inflammatory action is most violent.

If it be demanded why the irritation is more violent in them than elsewhere, I will answer, that it is in order that there may be a more copious secretion of mucus than common; for one of the uses of this humour is to separate from the internal surfaces of relation, all foreign bodies whose presence is harassing.

The irritation is perhaps not less actively felt by the muscular tissue, but this membrane can only contract more frequently.

The cryptæ, on the contrary, constantly in contact with the putrid and acrid excrements, receive even in their tissue the impression of the exhaled particles. Their own mucus putrefies in their lacunæ; they cannot long resist such multiplied irritations, and which constantly tend to destroy them. They lose their vitality, they change, and a loss of substance takes place, which is constantly enlarging from the centre to the circumference, by being preceded by a small engorgement, as we have said occurred in cancerous, venereal, herpetic, and other ulcers, whose character it is to extend themselves by destroying whatever they meet with.

Is the disease incurable when these ulcers are once established? I know that aphthæ and other excoriations of the mucous membranes are cured, and I cannot deny that the ulcerations of diarrhœa may be cured,* but I see great obstacles to it. When they occur, the vitality of the membrane is almost destroyed and its tissue relaxed and often insensible. It is, as far as I have been able to ascertain towards the end of the second month, in persons healthy at the commencement of the attack; but I have met with them in persons affected with diarrhœa for twelve or fifteen days, who were previously enervated by another disease when the discharges from the bowels have manifested the phlogosis of the colon.

Authors say that they have observed losses of substance of the mucous membrane of the stomach cicatrized after the action of corrosive poisons. I do not know that it has also been observed in the intestines.

* It is shown by the inspection of the diseased parts that the ulcers of the colon may cicatrize: I have satisfied myself of it, but the employment of stimulants arrests this work of nature.

But these losses of substance also occur suddenly in a healthy person,* whose mucous membrane has not been gradually debilitated and predisposed to putrefaction, as that of individuals affected with chronic diarrhœa.

The curability of phlogosis of the mucous membrane which has run on to ulceration, is then very doubtful.—But is there no external sign which can announce this ulceration?

A more speedy decomposition than previously, where the progress of the marasmus is not sufficient to produce it, since some persons affected with diarrhœa who have passed through all the degrees of the disease, have been found without ulcers. These last are then only probable after the second month, when the colour is observed to alter, the shape to change, and the excretions to assume the odour of putrid excrements.

It has been remarked that the ulcerations do not exist either in the stomach or small intestines.† I dare assert that it is because the fluids which habitually bathe the mucous membranes of these organs do not become putrid:‡ so also I have often seen them wanting in persons affected with diarrhœa, of light complexion, flabby constitution, insensible, and whose fluids in general seemed not to be highly animalized. I thought at first that the weakness of the lymphatic system should favour in them the engorgement and ulceration of the cryptæ; I have been much surprised to frequently find proofs to the contrary.

Finally, there may be other constitutional causes unknown to us, which cause a mucous membrane of the colon, thickened and engorged by a long-continued phlogosis, to lose its vitality, and even become gangrenous throughout, rather than suffer those partial disorganizations which I have said were the source of ulcerations. These exceptions would not prevent the mechanism which we have just developed, being the most common one.

Thus the terminations of chronic phlogosis of the mucous mem-

* They also sometimes occur slowly. (See the case of M. Libert, Vol. I. p. 486.)

† They also are met with in the small intestines, especially towards the termination of the ilium, and beneath these ulcerations we find the largest ganglions, which elucidates the mode of formation of scirrhus of the digestive tube.

‡ The phlogosis of this membrane also produces in the fluids of those parts this kind of alteration.

brane of the large intestines, are induration, and loss of sensibility, gangrene, and interminable exudation, which should be compared to the too prolonged resolution of which we have spoken in treating of the same membrane in the other types of phlogosis. (This exudation will be also a suppuration, if we compare the phlogosis of the intestinal mucous membrane with the bronchial membrane or pleura;) finally, ulceration, the pus of which would not be observed in the evacuations. This pus should be compared to that of sanious, spreading ulcers: thus the comparison tells us that it should remove the debris of the partially sphacelated and altered membrane.

CHAPTER III.

Treatment of Phlogoses of the Mucous Membrane of the Alimentary Canal, in general.

It has been repeated, and not without good reason, that intermittent ataxic fevers were, of all internal diseases, those which most strongly demonstrated the power of medicine: but it has never been said that phlogosis of the mucous membrane of the alimentary canal should be placed in the same rank. I dare assert it, and I hope that this proposition will soon become an established truth.

It is known that an intermittent ataxic fever becomes fatal in a few days, if the physician does not prevent the accessions by means of the most energetic febrifuges. It will be one day generally admitted that a phlegmasia of the mucous membrane of the digestive organs progresses so long as it is mistaken, because under such circumstances it must necessarily be badly treated; but if it be improperly treated, it always terminates in death. The only exception would be, certain cases, in which the disease being slight, the refrigerant effect of the *circumfusa* would diminish the susceptibility of the sick and place them in a condition proportionate to the excitants of which they are making internal use.

But are there not also exceptions in malignant intermittent fevers? Certainly, and I am convinced that these exceptions are

not sufficiently known. In the first place it is not always true that intermittent ataxic fevers, not prescribed for, are fatal on the fifth accession. This only takes place in morbid constitutions, where the exciting cause is of excessive virulence. There are many marshy countries where highly malignant intermittent fevers rarely prove fatal in a few days.*

I allude here to those genuine ataxic fevers only, which may be cured by cinchona: but how many are taken for them and which require a diametrically opposite treatment!† Several have been recorded in this work, and I mentioned in general terms, that in the summer of 1806, a great number of those labouring under fever, experienced, during the accession, vomiting and cardialgia, which were extremely dangerous to treat with cinchona. The case of Winter, (Case 4,) proved, that genuine and simple gastritis could resemble quotidian ataxic fever with delirium: and the error may frequently occur, for gastritis occasionally produces rigours. This rigour is the most severe in the evening, and delirium never fails to attend it during the night, if irritation of the suffering part is continued.

I formerly thought, that this could very seldom be the case in France; but since my return to Paris, I have concluded from several conversations which I have had with several physicians on this subject, that very often cinchona is given, as long as there is life, to patients who reject it and who are worse in proportion to the quantity they take. This indication is founded upon the vomiting itself and the anxiety which accompanies it, because these symptoms appear periodically, and thus recall the idea entertained by Torti, respecting malignant fevers. I shudder at the recollection of events of this nature which have come under my observation, as well as of those which are unknown to me, as I also do at the recollection of M. Beau! Therefore it is but too certain, that gastritis improperly treated, is as formidable to mankind, as misunderstood intermittent ataxic fevers.‡

* See *Journal de Médecine*, by Professors Corvisart, Roux, and Boyer, Vol. VII. page 311, et seq.—M. Fizeau has even tried to determine the characters of mild intermittent ataxic fevers.

† The same authors, report a case of intermittent ataxic fever, in which cinchona was for a long time useless.

‡ They are much more so; few men perish from intermittents without being *kinatized*; more than the half of society is destroyed by the fury for *tonification*.

On the other hand, the cases of successful treatment, which I think I am bound to relate in detailing the precepts of the curative method, will show, that gastric phlogosis, as severe as those which have been fatal under the influence of irritants, have yielded with astonishing facility to appropriate medicines. Consequently the treatment of these diseases will be as liable to call forth the power of the art, as that of malignant fevers. These considerations are fully capable of giving the most lively interest to the study of these kind of affections.

To satisfy an inquiring mind, every treatment must be the product of reflexion and never empirical. But how far are we from being sufficiently advanced to know all the true indications of every disease! I will mention for example, adynamic and ataxic fevers, in short, all continued fevers of bad character, which I include under the name *typhus*. I confess, that I have never been able to determine the treatment best adapted to them. It is necessary that physicians should attentively study the effect of various medicines. At the present time nothing is spoken of but of strengthening patients, labouring under these diseases, that is to say, of irritating them. Alas! how many there are, who are already too much irritated! I am well convinced, that the theory of these fevers, which so generally and with such impunity depopulate the earth, is scarcely in its infancy.*

I think that we are further advanced in our knowledge of phlegmasiæ. The action of external remedies enlightens us as to the treatment of internal phlegmasiæ. Ordinarily we find that it is sufficient to remove from a part recently inflamed, all external bodies capable of increasing irritation, and that phlegmasia spontaneously disappears at the end of a certain time, independently of all topical applications.

We know that certain substances diminish by contact, local, and consequently general irritation. We are sure that an excess of strength retards, and a certain degree of weakness in the individual favours a happy termination.

Upon all this we are well informed; but have we any positive

* Here again is a passage in which I have dared to think for myself. Why was I restrained by authority? Was it by preventing myself from believing in what I saw, that this authority has been serviceable to science? Alas! if it has blinded me so long, how many others has it not also blinded, who might have done better than I have done.

data to direct us in the treatment of prolonged phlegmasiæ? I dare assert that we have not; for example, we say, that an excess of debility is prejudicial to the resolution of phlegmasiæ; but we cannot point out the symptoms which indicate the commencement of the degree of asthenia which is incompatible with the favourable terminations of phlegmasiæ. We are deficient in a comparative table of the susceptibility of different organs calculated to inform us which are those that fall the soonest into this state of asthenia, and which we must hasten to excite. We are ignorant of the precise relation of the stimulating property of external bodies, with local susceptibility, and we call tonic that which perhaps may be only sedative, &c.

True knowledge upon all these capital points, can only be acquired by clinical observation and often-repeated exercise of the mind; but no one has as yet been able to point out to others, owing to not having given sufficient attention to the manner in which they acquired it, the mode of obtaining this knowledge in a short period of time.*

The proof of this may be observed in the surgical wards of hospitals. One surgeon directs the application of emollient cataplasms to a chronic phlegmasia, which is treated on the following day, by another, with Goulard's lotion, and occasionally, by a third, with alcohol or laudanum. They all, however, agree upon the topical remedy, when the phlegmasia is recent and somewhat violent.

In surgery, as in medicine, all the prominent shades of disease are well known and well treated; but all the obscure ones give rise to conjecture and vacillation of opinion.

I do not pretend to give at present any general data for the treatment of phlegmasia: I shall exclusively confine myself to those of the mucous membrane of the primæ viæ. Therefore, without seeking why stimulants are preferable to demulcents in particular external phlogoses, such as those of the eye and those of some wounds—or if it be true—or which are the exceptions—I shall commence by laying it down as a principle, that when the internal membrane of the digestive canal is heated, swollen, and painful, in short, when the sensibility is exalted, it cannot endure

* It was reserved for the physiological doctrine to furnish the method of doing it.

the direct application of irritating substances, and that its recovery is alone favoured by the application of those of opposite properties. I will also say, that I am unacquainted with any exceptions to this rule; for, when the membrane accommodates itself to the action of irritants, the state of phlogosis has given place to another.

These principles being laid down, it becomes a question to determine what are the substances which, in relation to gastric phlogosis, are entitled to the name of irritants or sedatives, and which is the best mode of directing their use. As each extremity of the membrane presents some differences in their relations with external bodies, I shall divide my subject, and describe the treatment of gastritis previous to occupying myself with that of enteritis.

Treatment of Gastritis or Phlogosis of the Mucous Membrane of the Stomach.

There is no treatment more simple and easier than that of acute gastritis. It requires first to give the phlogosis time to become allayed, previously to introducing food in the stomach; 2d, to favour its fortunate termination by appropriate medicines.*

1st. The first of these two precepts is of the greatest importance. It often happens that the patient retains an appetite, or that he is deceived by a false sensation, that is to say, he feels a kind of uneasiness, which he thinks may be removed by food. The physician should be very careful how he pursues this false indication, for the smallest quantity of food redoubles the suffering of the patient. Now it never becomes considerable without mental alienation,† from which there results an additional source of error for the practitioner not well acquainted with the physiognomy of the disease. But eructation and sensation of weight in the stomach, will most frequently indicate the injurious effects of food, before delirium appears.

* I shall make no remarks on emetics; they are only proper in cases of poisons. Many excellent works contain the most satisfactory precepts upon this subject. The best with which I am acquainted may be found in the work of M. Tartra on poisoning by nitric acid. The effects of other poisons have also been the subject of very well written dissertations presented to the *School of Medicine of Paris*.

† Many cases of mania are produced and kept up in this way.

Every thing which requires digestion should be abstained from. Therefore, broths, decoctions of farinaceous articles, pulpy and muco-saccharine fruits, should be withheld in cases of the most violent acute gastritis. Amongst the drinks which possess some nutritive properties, a weak solution of gum tragacanth is the only one which can be admitted. Gum arabic is slightly irritating, no doubt from the extractive matter which frequently colours it, particularly that which is indigenous; but occasionally we are compelled to make use of it.

2d. Whilst the patient is deprived of aliment and drinks, which may have consistency, in order to leave the stomach quiet until the moment when its phlogosis shall have been resolved, this resolution may be encouraged by bleeding, by the immediate administration of particular sedative medicines, by topicals, and other external means. General bleeding is but seldom proper, and only in the most violent degree of the disease, when strength of pulse, dyspnœa, or sympathetic cough require it. Local bleeding, especially by leeches applied about the epigastrium, is of the greatest benefit. But this is generally not curative;* it can only be useful when combined with the employment of emollients, &c. and without their assistance it only obtains temporary amelioration.

The sedative medicines which I wish to designate are taken from the class of vegetables containing pure and simple mucilage, without the least combination of extractive matter or aroma, and in the acids from the same kingdom. Therefore a choice may be made from the mucilages of flaxseed, of marsh mallow, of the seeds of the quince, and of others which are absolutely insipid. Gum tragacanth, which I have pointed out as aliment, is also suitable as a medicine. Decoctions, infusions, and solutions, which are prepared with these mucilages, should be weak, and made as much as possible with distilled water, so that the ptisans which are made should at most be but slightly unctuous to the touch. Should they be thicker, the patient will loathe them from the very first.

For this reason I abstain as much as possible from demulcent, gummy, and oily draughts. They are, however, sometimes very

* I now consider leeches to be the best remedy.

useful, as will be hereafter seen by a very interesting case; but it is always proper to ascertain if light drinks are not sufficient, before resorting to these preparations, which are in fact only the same substances more concentrated. When I have deemed it necessary to employ these potions, I have directed as a vehicle, a solution of gum tragacanth, or an infusion of linseed, with the addition of a mucilaginous syrup; that of althea or of capillaire is to be preferred. Lemon syrup is indicated as an acid, in order to prevent the clamminess of the mouth and loathing which result from the use of saccharine and unctuous substances.

Next to mucilaginous articles, those which appear to me to be the most strongly indicated, are the vegetable acids, but a choice should be made of them. Vinegar is much more injurious than beneficial; if it be imperfectly made, if it still partake too much of the wine, it still contains some alcohol; if it be strong, its acid will exercise a kind of irritation upon the painful surface, the effects of which are inquietude, agitation, and a slight pain in the epigastrium. I have never found as good effects from the oxycrate or the syrup of vinegar mixed with water, as from lemonade, although I diluted the drink until the acetic acid was scarcely perceptible to the taste. Lemons are of all fruits those which furnish us with an acid most agreeable and most suitable to the susceptibilities of our stomachs. Pure tartaric acid seems to me to deserve a place next to citric: as it is very penetrating, it should only be given very much diluted. Amongst the acids of the muco-saccharine fruits, gooseberries and raspberries should be preferred: the juice of the orange flavours water with a mild acid which can never do any harm, but it soon cloyes. The mulberry furnishes so sharp an acid, that the same must be said of it as of the acetic and tartaric acids.

Whichsoever may be the vegetable acid selected, (for the mineral should be proscribed as poisons,) there must be no more used than is necessary to enable the water or the ptisan to give a slight, agreeable, stimulating, and refreshing sensation to the palate. It is necessary that sugar should be combined with it with the same precaution. Although sugar be a kind of crystallized mucus, it possesses a slight irritating property, and has a tendency, when it is not readily digested by the stomach, to alcoholic fermentation. Therefore, the drinks should be only acidu-

lated and sweetened in a very moderate degree, the mucilage but small in quantity, and alcoholic, aromatic, or bitter substances must not be combined with them.

I have never used water, impregnated with carbonic acid; however, as I have never remarked that beers, which contain the most, have acted upon the stomach with a tendency to phlogose it, I think no bad effects would follow a trial of that acid; but it should be pure, and the water should not contain any metallic particles, for nothing keeps up more powerfully, irritations of the alimentary canal.*

I have remarked, that certain topicals possessed the property of diminishing irritation of the internal membrane of the stomach. Let us inquire which they are, and seek out their mechanism or mode of acting.

Blisters have always appeared to me hurtful. It is of no consequence how they are viewed, it is very certain that they injure more by the irritation which they extend to the system, than they do good by their revulsive property. Revulsion only takes place, generally, in proportion as the new irritation, by displacing the old, relieves the organism from a troublesome stimulus. Now, when it is wished to treat gastritis by blistering, the certainty that the phlogosis which it excites upon the skin, does not displace that of the stomach, and that it increases the general difficulties, instead of allaying them, is very soon realized; perhaps, the inconvenience which Baglivi found to arise from the use of blisters in the climate of Italy, should be attributed to phlogosis of the mucous membrane, where that species of irritation is frequently complicated with other diseases when it is not itself the principal one.

I will admit, since experience proves it, that certain gastric irritations may be displaced by vesicatories; but to yield to them, they must necessarily be mild. Dr. Louyer-Villermay has cured several cases of vomiting by a blister plaster applied nearly over the stomach; but were these vomitings the effects of inflammation? Did they not rather depend on increased irritability of the muscular tunic? Sensibility could not be greatly increased in

* Carbonic acid is a powerful irritant, and greatly aggravates the symptoms in either acute or chronic gastritis of any intensity. It is useful in the last, when circumscribed, and the mucus is very abundant.

the papillæ, without the blood being determined to the capillaries from the part which interlaces between them and without their being phlogosed; now, such a phlogosis would not disappear suddenly, particularly when it has continued a long time; it requires the absence of irritants for several days at least to remove it.* These vomitings appear to me, therefore, to depend rather upon a disorder of the muscular membrane, the tissue of which, too irritable under certain circumstances, does not readily allow itself to be distended, and constantly evinces a disposition to spasm. Their mode of action is precisely similar to that which produces the same inconvenience in pregnant women and in many other individuals at the sight of or from the remembrance of particular disagreeable objects, (See, thesis on vomiting, by M. Bouvenot.) Therefore, it is extremely possible, that the stimulus, produced by cantharides upon the skin, suddenly diverts from the nervous extremities intermingled in the fleshy fibres of the stomach, the determination to them which rendered them too excitable.

It is not so in cases of true phlogosis: besides the irritation of the skin being sympathetically repeated in the already over-stimulated mucous membrane of the stomach, the cantharides may also furnish very acrid particles, which may be absorbed and make an irritating impression, not only on the bladder, but likewise on all the great cavities of the system.

Other topicals which redden the skin, are not more fortunate in displacing or allaying irritation of the gastric mucous membrane: the stimulus which they add to the nervous system, necessarily contributes to the phlogosis, which receives a new impulse from it. I have generally remarked that the slightest pains added to the uneasiness and to the anxiety which phlogosis of the stomach occasions.

I am aware, that good effects have been attributed to cups and to moxas, in cases of scirrhus of the stomach. It is possible, that an issue may be useful when the lymphatic system manifests a tendency towards wandering engorgements. It is not so in gastritis induced by too irritating *ingesta*. Artificial ulceration, therefore, should be adopted in gastric phlogosis only when it shall present itself in a chronic state, in individuals whose absorbent system is inactive.

* And sometimes several months and even several years.

If all disagreeable impressions made on the skin, increase inflammation of the stomach, there must result an unpleasant effect upon the sensorium. Nature herself points this out. The sick are eager to expose the chest and epigastrium, they disengage their arms from the bed clothes and seek fresh air,* whilst they cannot endure warm air and heating and irritating topicals.

It will be proper to give a distinguished place to cold,† or at any rate, to tepid fomentations of pure water, of oxycrate, of vegeto-mineral waters, of decoctions of linseed, of marsh mallow, of wild carrot, &c. in the treatment of this disease. They ought to be frequently renewed, and should the flannels imbibed with them, be left on the part, care must be taken, when the heat of the body shall have made them warm, to moisten them occasionally. The application of ice in summer, and to individuals in whom the heat is considerable, is not to be despised; in winter, and in individuals who present but a feeble reaction, these means and even topicals not quite as cold, might, by giving a centripetal direction to the general flow of perspiration, excite catarrh or some other disease. It will, therefore, be more prudent to confine the applications to tepid fomentations of oxycrate, or of emollient decoctions, to lotions to the whole body and to baths prepared with these same fluids.

* The desire to protrude the arms from the bed, and occasionally to get up, is placed by Dr. Tartra amongst the symptoms of gastritis.

† In the *Annales Générales de Médecine d'Altembourg*, for Dec. 1806, mention is made of a case of trismus, almost miraculously cured with cold effusions by Dr. Currie.‡ There resulted from it, a subsidence of pulse, coldness of the skin and faintings, during which the spasm disappeared. Dr. Franck has used this method with considerable success, in ardent fevers, in typhus fever with petechiæ, accompanied by the most alarming nervous symptoms. Many authors, no less credible, have mentioned the good effects of frictions and fomentations of ice in the plague.

Cold restores these unfortunate beings to life, always by removing a too impetuous reaction, which threatens to lacerate the tissue of the viscera, and which by the excessive pains it there creates, produces the most alarming ataxic symptoms, and not by a tonic virtue analogous to that of wine or bark. It cannot act differently, as it can only strengthen, after having enfeebled, by provoking reaction. How can reaction take place in an adynamic patient who is almost pulseless? Consequently no one would attempt to foment him with iced water.—It is also by the property it possesses of abating in some respects the action of the sanguineous capillaries, that cold can be useful in gastritis.

‡ See Medical Reports on the Effects of Water, cold and warm. By James Currie, M. D. &c.—Eds.

Let not all these means be despised as superfluous: I have obtained from them the greatest advantages. In many individuals, the pain and gastric uneasiness have almost suddenly disappeared by the application of a flannel, steeped in a decoction of the leaves of marsh mallow; they are always soothing and facilitate perspiration, which is of great importance in the cure of a patient in whom pain threatens to prove fatal.

All these curative means being known, they should be adapted to the different periods of the disease. Let us now examine into the modifications which are required in the employment of these means, by circumstances, complications, and varieties, and endeavour to connect precepts to facts, by means of examples.

Treatment of Acute Gastritis.

I shall not speak of the prophylactic treatment; those who wish to preserve themselves from gastritis, will easily succeed by abstaining from alcoholic liquors and animal food, as soon as they feel sensations of heat in the stomach, or they observe some of the symptoms which we have pointed out in the foregoing statement. These precepts are only applicable to patients actually labouring under acute gastritis.

As soon as this disease is detected, all irritating medicines which have been previously used, as has been remarked, must be suspended; for the sick never make use of pure and simple demulcents; weakness and anxiety always induce them to require wine and other comforting preparations. There should be no fear of debilitating too much by pure water or by lemonade, habitual drinkers and gourmands, accustomed to live in a perpetual state of super-excitation, by indulging in the strongest liquors and the most succulent and spicy meats. It has been observed that too severe a diet threw them into a dangerous state of prostration; if this should be occasionally true, it is not so in the diseases of which we are treating.

The debility of which they complain is solely the effect of pain in the stomach, and never becomes allayed, so long as use is made of stimulants. I speak now from experience; I have succeeded with this course in individuals for many years habitually addicted to good living and to spirituous drinks. In proportion as they

are fat and of florid complexion, indicatory of good digestion and materials in reserve, which nature will employ at her discretion, there will be less to fear from prostration.

During the early stage of acute gastritis, all therefore that must be allowed is lemonade, orgeat, flaxseed tea, gooseberry water, &c. without the addition of broth. Patients should also be recommended to take their drinks cold and in very small quantities, in consequence of the difficulty with which the stomach accommodates itself to any distention.

This should be strictly observed as long as the febrile action and the sympathetic nervous affections continue. When they have ceased, gramineous decoctions, those of saccharine fruits, such as apples, plums, pears—veal or chicken broths, according to the taste of the patient, may be tried. These ought to precede for several days, the administration of panadoes, gruel, and soups; and solid food should not be permitted until after being assured that digestion will not awaken any difficulties in the circulation, the secretions, and the functions of the brain.

In giving solid aliment we should commence by those which are tender, and taken from the vegetable kingdom, and by those which partake of both animal and vegetable nature, such as milk and the tender flesh of young animals and of white delicate fish. The drink which may be permitted in the first instance, to contribute to the digestion of solid food, should be pure water, and afterwards flavoured with a little wine. Beer is preferable to pure wine; but if it is too much charged with hops or with alcohol, it will be of great advantage to dilute it with water.

I cannot determine exactly at what period of acute gastritis the stomach will have recovered the power of digestion. The sooner we abstain from introducing food into it, and the more strictly this abstinence is observed, whilst this organ still retains all its powers, the sooner will its power of digestion be restored. The weakness and indulgence of physicians always cost the patients very dear. I shall now give a proof of it by the relation of a case of gastritis of the most acute form, observed at Paris, in which will be seen two relapses, and several exasperations or retrogradings in convalescence which might have been avoided if there had not been a division of opinion respecting the characters of the disease. This gastritis is also remarkable from its predominant symptom.

CASE XXVIII.—*Acute gastritis simulating continued ataxic fever.*—M***, forty-eight years of age, medium height, brown hair, body pretty muscular, well-developed, and moderately provided with cellular tissue, gifted with strong passions, and very subject to anger, had led during four years a very irregular life in respect to nourishment. He had not eaten at regular hours, and most of his repasts were feasts which continued the greater part of the night. Sometimes gastric obstructions resulted from them; but during the last year in particular, he had had several attacks, which his physician had always removed by evacants, diluents, and tonics.

In October, 1807, having indulged in a grand feast, which lasted during the greater part of the night, and having drank several kinds of wine, he experienced after going to bed, great uneasiness, and was attacked with violent vomiting and copious purging. He scarcely swallowed his drinks before they were rejected. The discharges from the bowels were also frequent and became black and fetid. Very little pain attended these evacuations. The pulse was neither tense or accelerated. Aqueous and demulcent drinks were employed. This cholera lasted four days.

The evacuations having ceased, the prostration was very great, and antispasmodics and tonics were given; but very soon the pulse increased, became tense and frequent, skin hot and dry, mouth parched, brown, and coated. This state presenting the aspect of adynamic fever, wine and water was administered; but as the pulse did not abate, no other more active stimuli were employed, and, at the end of three days the febrile action ceased, and was followed by a favourable state of tranquillity.

The attending physician, observing his patient in a state of apyrexia, with appetite, allowed him rice custards, and thought that a few glasses of old Bordeaux wine, were indispensable to restore the strength, reduced by the excessive evacuations. He also thought it necessary to procure an evacuation of the bowels with a dose of manna and rhubarb, on account of the constipation which followed the cholera. Four discharges followed without pain, and the patient continued the analeptic regimen. Two days were passed without any pain; he thought himself already far advanced in convalescence.

On the third, which was the tenth of the attack, he was seized with violent fever, redness of the eyes, noisy and loquacious de-

lirium, agitation, hasty strides through his apartments to join with certain persons whom he fancied he heard and saw; inquietude and suspicion produced by a supposed robbery of his effects going on in his presence; and astonishing alteration of features.

These symptoms immediately directed the attention of the physician to ataxic fever, and induced him to prescribe the camphorated decoction of cinchona and antispasmodic draughts, that is to say, irritants of the alcoholic class. Their inutility induced him to resort to sinapisms applied to the calves of the legs. The physician thought that he observed a slightly favourable modification when each medicine was first administered; but the evil continued to progress the instant afterwards with fearful rapidity; and on the next day, being the eleventh, I was called in consultation: I had before me the following spectacle:—

Face anxious; eyes haggard, with the conjunctivæ of a deep red; looks of a maniac, or of the last degree of ataxic fever; colour faded, but of an obscure and vinous red; tongue clean; skin dry and adhering to the muscles; febrile heat pretty well defined; pulse tense, frequent, and strong; constipation; suppression of all excretions—he discharged only a few drops of very high-coloured urine; no pain in the epigastrium or abdomen, and no sensibility upon pressure. The febrile action and delirium were the only prominent disorders; the character of the delirium was as follows:—interrogated respecting his health, he said that he was well, and inquired if the table was prepared. He recognised his relations and his friends, but he constantly entertained them with the fantastic objects which occupied his mind. He thought himself surrounded by persons who were robbing him, or who were disposed to injure him in some other way; he constantly sought for them around him. Although he had almost always a smiling countenance, an expression of grief and especially of defiance, could be observed in his altered features. He continually thrust his hand into his shirt or into his bedding, and seemed to throw upon the floor something which he removed and which seemed to incommode him very much. He also imagined that these same objects were adhering to his fingers, which he endeavoured every moment to shake off. His hands were very dry and appeared desquamating. The muscular strength although very much diminished, even since the day before, still permitted him to walk

a little. He kept himself erect in an elbow-chair, or in his bed, turning every instant with rapidity to converse with the objects of his delirium. His voice, indistinct, began to grow weaker, and his limbs were observed to have a tendency to tremulousness.

The knowledge of the causes of the commencement and of the progress of the disease, and the influence of the means which had been opposed to it, convinced me that these nervous affections were the sole effect of phlogosis of the mucous membrane of the stomach, the numerous papillæ of which were in a very painful state, very harassing to the system. I recommended that no other remedy should be used, except a solution of gum tragacanth, edulcorated with the syrup of lemons, and forbid every kind of nourishment. My advice was adopted.

In the evening there was diminution in the tenseness of pulse. The patient had urinated three times with ease and abundantly. The agitation was less and the delirium not so loquacious. During the night slight moistness of skin.

On the 12th his delirium was lessened; his mind only wandered upon the assemblage of persons which he supposed congregated at his house, with the breaking and stealing of his effects. In the evening he only spoke of it when recalled to his memory. The agitation and restless inquiry and action to free himself from some annoying object, had disappeared. Pulse slightly tense and frequent; eyes still red, but no longer haggard.

On the 13th the eyes had lost their redness, the complexion had revived, the face was smooth, and there were borborygmi. Great appetite. He was allowed two portions of weak vermicelli soup, which was only followed by some eructation, slight heat and tenseness of pulse. The night was passed tolerably tranquilly.

The 14th, more vermicelli taken in the morning. Frequency of pulse, heat of skin, inquietude, distrust. Recurs more frequently to the objects of his delirium; colics; little appetite. An oily emollient enema produced five evacuations, the first of which were solid, and the remainder black and very fetid.

On the 15th he took two portions of oatmeal gruel, which produced great uneasiness and debility. Mouth clammy. He seldom speaks of the objects of his delirium. In the evening allowed a roasted apple.

On the 16th, morning, appetite good: took some gruel. It was

thought proper to add some tonics to the treatment, on account of the clammy state of the mouth, and the sensation of weakness and lassitude of which the patient constantly complained. A ptisan of barley, edulcorated with an ounce of the syrup of orange peel to the pint, was adopted, which was immediately followed by a sensation of heat in the mouth and stomach, acceleration of pulse, anxiety, colic; evacuation of hard feces from the bowels at four o'clock. The heat of skin, the uneasiness, and the extreme thirst persisted. At six o'clock in the evening I visited him. The patient was disgusted with drinks of gums and syrups. I put him upon lemonade. Prodigious alleviation. In a few hours tranquillity was restored, and the next morning he had an appetite.

On the 17th, nothing new; a portion of rice was retained, producing, however, the slight effect spoken of above.—Lemonade.

On the 18th, after taking more rice, there was agitation, frequency of pulse, heat of skin, red conjunctivæ, return of delirium, and constant eructation. It became evident, in fact, to every observer, that each digestion produced a sensation of weight and eructations, excited more or less febrile action, and tended to bring back delirium. The stomach being therefore too irritable to act with efficacy on any thing but liquids, it was decided to deprive the patient of all nutritive aliment. He continued two days upon the use of lemonade.

The tranquillity and benefit which followed, warranted the trial of supplying the absence of aliments with veal broths, three spoonfuls of which were given, three times a day, for two consecutive days, and the apyrexia continuing, it was made more nutritive.

This also being well received, weak soups were tried, which were digested without any difficulty, and which excited several *bilioso-stercoral* evacuations, without fætor or pain; in short, the appetite became good.

On the twenty-second day there only remained weakness, and pretty frequent discharges of wind, but intestinal. A few spoonfuls of claret wine, with toast water or broth, produced no excitement. Convalescence appeared complete. In fact, M*** became perfectly restored to health in a short time.

Observations.—It was clearly demonstrated to me, who am

in the habit of seeing gastric irritation yield, without much difficulty to demulcent drinks, seconded by diet, that this disease would have terminated on the fourth day, had not the febrile action which succeeded the vomiting, been treated as a putrid fever. But the tonic treatment was not at that period the most injurious, for it was not carried to any very great lengths. The wine and water, the veal broth, and the orgeat which were given, could not have produced much irritation upon the membrane. Consequently the fever ceased. Two days of abstinence from all nutritive food or of exacting digestion from the stomach, would have been sufficient to have prevented its return. It is therefore to the vermicelli, to the claret, and to the purgative, which were given to confirm the convalescence, that we must attribute the relapse.

This appeared under another form from the primitive disease; the phlogosis was no longer indicated but by the disturbance of the brain and of the circulation. But it was much more formidable. I have always observed that delirium is a most inauspicious attendant upon acute gastritis. I for a long time considered it as one of the most positive evidences of disorganization of the membrane; because those in whom I had seen it, all sunk under it. But in reflecting that their diseases had either been mistaken or badly treated, and that redness and thickening are not proofs of irreparable disorganization, I began to look upon delirium only as the effect of the pain. The cure of many patients, labouring under delirium, within my own observation, before M***, strengthened me in that opinion, which still appears to me most rational. Nevertheless, I have always observed, that this symptom indicated a very advanced degree of the disease, since it is in itself the consequence of a violent disorder, and that it precedes the rapid diminution of the functions, which until then had best resisted the influences of the phlogosis.

The lesser relapses, which were observed after the disappearance of the more violent symptoms, should be regarded as the effect of presenting aliments too soon to the stomach. From fear that some may think proper to doubt this, I shall now report another case of acute gastritis, which was protracted by stomachics, &c. far beyond the term of ordinary continued gastric or putrid fevers, and which yielded as kindly to proper treatment as that of M***.

CASE XXIX.—*Acute gastritis tending to become chronic.*

—Taconin, a soldier in the ninety-fourth regiment, dark complexion, small, slender and sensitive, had been ill for more than thirty days, and at the hospital about fifteen, when certain gastric symptoms attracted my attention. It was on the 10th of May, 1806, a period when gastritis began to be common amongst our soldiers, recently arrived in Friuli.

Taconin had arrived with symptoms called *gastric derangements*: I had treated him, as is usual, by evacuants followed by tonics; he seemed afterwards to go through the periods of a short meningo-gastric continued fever,* and became convalescent. But instead of regaining his strength, he fell into a state of languor, accompanied by a slight febrile action, coated tongue, frequent nausea, succeeded by vomiting every thing that he swallowed, and diarrhœa.

The continuance of this state for a few days, was sufficient to throw him into a state of extreme debility, accompanied by great loss of spirits; alteration of features, and to reduce him to a state of emaciation, very closely allied to marasmus.

The evacuations having been as abundant as could be desired, both before and during the fever, I wished first to relieve the debility and anorexia, by the use of tonics. The bitter tinctures, that of cinchona, an infusion of chamomile, were tried, and it was during their use, that the nausea changed to vomiting. This ill success, therefore, led to the employment for this patient, as well as for all others, of acidulated gums, which, from that time, were the only internal remedies made use of during the course of the disease. I added the external application of emollient fomentations upon the epigastrium.

The progress of the disease was not at first easy to arrest: Taconin, consumed by excessive thirst, drank incessantly. But immediate vomiting constantly prevented him from quenching his thirst, and he was in despair. Finally, on the fortieth day, and third of the emollient treatment, the vomiting ceased: but Taconin complained of having water constantly in his mouth, as though he was on the point of vomiting: his extremities were cold and his pulse slightly accelerated, which increased in the

* Because the emetic increased the gastritis.

evening almost to heat of skin. The same remedies were continued, and for food egg beaten up with fine sugar and some water, (*lait de poule.*)

On the next day, the debility was so great, that I allowed him a small quantity of wine; it produced no bad effect. The progress of the amendment was observable for the next two days. The forty-second, he eat two portions of thickened milk and took four ounces of sweetened wine.

On the 4th of June, fiftieth day, although he had recovered considerable strength, there was still frequency of pulse in the evening. It was an admonishment not to proceed so fast in the augmentation of nourishment. I profited by it, and the convalescence proceeded. The sixty-first day, he was familiarized with all kinds of food, and on the sixty-fifth day, he left the hospital in perfect health, and there was no relapse.

Observations.—It will be observed that I did not immediately detect the disease; for I at first treated it as an obstruction, and afterwards as gastric fever. I am now well convinced, that had there been on my visiting him an observer who was well acquainted with it, he would have remarked, that the gastric obstruction had been only palliated by the evacuants, and that the supposed gastric fever was nothing more than a febrile action arising from the progress of the gastritis, which tended slowly and obscurely to become acute. He would no doubt also have observed, that the febrile action, far from terminating, like continued fevers, by the return of appetite and of the secretions, was only followed by a diminution in the strength of the pulse, in the intensity of the heat and uneasiness, without genuine apyrexia. He would have pointed out that the functions, which appeared to me feeble from the want of energy, were only suspended by the pain in the stomach; he would have represented, that far from calming that pain by my stimulants, I was increasing it from day to day, by directly depriving the system of the means of repairing its losses. Deprived of this information, and which I could not find in the annals of medicine,* it was necessary that vomiting should supervene to attest the bad effect of the tonics, before I thought of giving demulcents.

* And which no one could give me.

But the facility which I experienced in making the symptoms of intermittent and continued fevers, and those of several nervous affections, &c. appear and disappear at pleasure, demonstrated to me the wonderful influence of the treatment, upon gastric irritations, and finally conducted me to the theory, which I now publish.

I have just described a gastric irritation, prolonged by improper treatment; I shall now give the details of another, which was suppressed in its commencement. It will also serve to prove, that thick mucilages and oily substances may be beneficially applied, although but seldom.

CASE XXX.—*Sensibility of the stomach threatening phlogosis.*—Victor, dark complexion, very robust and fleshy, twenty-two years of age, entered the hospital at Udine, complaining of having been annoyed for about fifteen days with an insupportable pain in the pit of the stomach. The sensibility was so acute in that region, that he could not endure the least pressure. He was without fever.

He had been vomited and purged at the barracks, and bitter infusions and decoctions afterwards given to him. This treatment had produced the discharge of a worm by the mouth, but the pain in the stomach had nevertheless increased, and when it disabled him from duty he was sent to the hospital.

He was confined to his bed, without appetite, low-spirited, deprived of sleep, restless, and twisting his body like a person suffering with griping pains. He could scarcely swallow any thing whatever.

I ventured to vomit him on the first day, fearing the presence of other lumbrici in the stomach and because I could not observe the least febrile action. Ipecacuanha was chosen for that purpose. There resulted from its emetic effect, which was pretty active, serous and bilious evacuations only, without any alleviation of pain. On the contrary, the disease increased, and in a short time to such a degree that any shaking of the floor by those who passed near the bed was felt in the suffering part.

For three days, solutions of acidulated gum Arabic had no effect. On the fourth, I directed for him a pretty strong draught of the same solution, and two ounces of the oil of olives. In six hours, the gastric pain, which had lasted for about twenty days,

disappeared. The patient only complained a little of the effect produced upon him by the footsteps of those who passed near his bed. But this last symptom of local sensibility disappeared on the following day, and Victor left the hospital on the thirtieth day from the attack, and fifteenth of his residence in the hospital, 29th December, 1806, perfectly restored.

Observations.—Did this gastric irritation owe its origin to worms? The one discharged by the emetic previous to his entrance in the hospital, and the sudden disappearance of the symptoms, might warrant the supposition. In fact, it will be said that it is almost impossible for a gastric phlogosis of twenty days standing to disappear in two or three. The only effect of the oil, therefore, was to compel the worms to leave the stomach, which they had occupied from the commencement.

It is very possible that the worms existed in the stomach until the patient took the doses of oil; but even in that case it is also true, that the bitters of which he made use previously to coming to the hospital, increased the pain; that the emetic given by my direction added to it rather than allayed its intensity; that he had a repugnance to wine and solid aliments; that if he was not cured by the mucilaginous solution, he was at least soothed and took it with pleasure. It is, however, very evident, that the internal membrane of the stomach was very irritable, and of that kind of irritability which does not yield either to tonics or antispasmodics. This kind of sensibility may be accounted for as is thought best; I who know what is the prelude to decided phlogosis, must view it and treat it as a slight inflammation, and experience daily confirms me in the opinion. As to the suddenness of the recovery, I am not surprised at it. I have often succeeded in two or three days in allaying an irritation of some standing. In these cases, I look upon the disease as existing of itself in a very mild degree; but always kept up by irritants and ready to disappear the moment that we cease to excite it.

Is it not also known that the irritation induced by worms in the mucous membrane, may give rise to inflammation? It may, therefore, be dangerous to treat them by anthelmintics, when it is probable that they have produced this serious effect.

Worms were often complicated with gastritis, when this disease was most prevalent at Udine. I frequently found them in the bodies of those who had died of dysentery, and yet I never changed the

mode of treatment. When I thought proper to try the effect of bitters, called *vermifuges*, I observed such serious results, that I hastened to return to the sedative and edulcorating treatment, and the patients in whom the phlogosis had not had time to become inveterate, nevertheless recovered. I might have supposed that the major part of those labouring under diarrhœa, had lumbrici in the colon: should I on that account have resorted to bitters and drastic purgatives? But enough has been said to convince every one how pernicious such a mode of proceeding would have been.

Authors tell us that purgatives should be used in the treatment of diseases arising from worms, merely as palliatives; that is to say, they should be employed with the intention of freeing the digestive canal from the presence of worms, and that it is from bitters, tonics, and astringents that the radical cure must be expected. This radical recovery presupposes that the membrane has been cured of its disposition to furnish the superabundant mucus which sustained the worms. In the cases cited by authors, the mucus was the product of relaxation and debility;* in those which I have reported, the mucus was engendered by an inflammatory irritation. I therefore acted correctly in endeavouring to prevent the generation of these animals by the use of diluents and emollients, and I was in fact daily encouraged by the success of such medicaments.

However, I was careful not to devote myself too much to this practice. I was aware that there are cases in which the most pressing indication is the expulsion of the worms. Therefore, whenever they appeared to be in great numbers, or that their presence in the stomach occasioned symptoms which rendered the gastritis more formidable, I examined the state of the circulation. If the pulse did not indicate too violent phlogosis, I endeavoured to ascertain whether the worms did not produce more actual injury than evacuants would, and when the phlogosis was not of the most violent kind, I ventured on the use of some emetics. But I never did it previously to having tried the effect of oils, which

* These cases are rare, and the gastro-enteritis is increased by the use of vermifuges. How many children are daily conducted to *tabes mesenterica* by this practice, and perish the victims to a prejudice which directs strengthening the patients for the prevention of the reproduction of worms!

were generally sufficient either to produce vomiting and the discharge of the worms, or to expel them from the stomach and allay the irritation which they had occasioned.*

When the sensation of strangling and rising in the throat, gastric cough, mutism, afflux of saliva, grinding of the teeth, starting during sleep, dilatation of the pupils, shining eyes, and fixed *vellicating* pain in the region of the stomach, predominated over the symptoms of gastritis above-mentioned, I did not hesitate to try the effect of vermifuges. Calomel, aloes, and the worm powder of the codex preceded the use of emetics. But immediately after the last, I resorted to the use of gums and oils, in order to anticipate the consequences of too much excitement. If the symptoms of worms still continued, I did not recur to the tartar emetic or ipecacuanha; I was satisfied with oil combined with lemon acid, with giving in conjunction the solution of gum, and feculent and farinaceous food easy of digestion. If I had had castor oil, I should have made frequent use of it; for the want of it, I made use of manna combined with lemon syrup.

This practice always appeared to me to be the safest, and I never knew it to fail, except in one case, in which the worms were so numerous that they excited limited phlogosis with sphacelation, in numerous isolated points, throughout the digestive canal. It was to the nervous disturbance produced by these multiplied points of irritation, that I attributed the death of the patient, who had, notwithstanding, discharged a great number of worms from the effect of the medicines of which we have just spoken. But these animals very seldom exist in such vast numbers. Most frequently, the symptoms no longer appear after several have been discharged, and the use of acidulated oils is continued. I ought to mention, that to be successful with these remedies, they should be given in powerful doses. I have often congratulated myself, in cases of gastritis, complicated with worms, upon having ordered to the extent of from six to eight ounces of oil of sweet almonds, during a day, combined with an equal quantity of a strong solution of gum tragacanth.

From the moment that weakness of stomach, with sensation of internal cold, announces the transition of the stage of excitement

* When gastro-enteritis is removed, the worms are evacuated by the exclusive powers of nature, and cease to be reproduced.

to that of relaxation, bitters and wine, are to be resorted to, in these cases, as well as in those of pure and simple gastritis.

The utility of the refreshing and emollient treatment, in cases of gastritis which present symptoms resembling those of gastric and ataxic fevers, and those produced by worms, will be seen by the three preceding examples. I have pointed out how it should be modified in these last complications. Let us now see what course it is proper to pursue, when acute gastritis has so oppressed vital action, that the patient presents the external appearance of adynamic fever.

CASE XXXI.—*Acute gastritis, simulating adynamic ataxic fever.*—Sauriot, twenty-eight years of age, chestnut-coloured hair, tall, regularly-formed, sprightly, muscles soft and of medium size, became sick on the 23d of July, 1807, at Udine, during the warmest weather. He entered one of my wards on the 28th, the fifth day of the disease. From the beginning, I observed cadaverous paleness and prodigious debility. He was immoveably stretched out on his bed, his eyes closed, limbs wide apart and careless, like those of a dead body. This prostration was occasionally interrupted by almost inarticulate moanings and contortions of the trunk. He changed position whenever requested to speak; he could not utter a single word, he opened his eyes with a distracted and suffering look, and rolled them like a dying person. Although he gave but little proof of hearing the questions, he indicated by signs and by monosyllables, that the epigastrium and all the superior portions of the abdomen, were the seat of pain. He rejected all that was offered to him, either by gestures or by closing his teeth. If he was induced to swallow any thing, it was immediately rejected. He had obstinate constipation.

In other respects, his limbs were cold, although his trunk was sufficiently warm. The pulse was small and slow. The complexion was no longer of a reddish-brown; but rather of a remarkable leaden and yellowish paleness, very much resembling that of a dead body. No fœtor in the excretions.

The details of the cause and invasion of the disease, were necessarily defective in a patient brought under my notice in so deplorable a condition. But the season, the prevailing epidemic, the obstinate refusal of the stomach, which could no longer retain

any thing, the coldness, the anxiety, the inclination to extend the arms and uncover the chest, the contortions of the trunk and the indication of the suffering part evinced by gesture, furnished me with materials for a diagnosis; I rejected the idea of adynamic fever, and referred all to the exalted sensibility of the epigastrium, occasioned by phlogosis of the mucous membrane of the stomach.

I very soon decided on the course of treatment; I prescribed only a solution of gum, acidulated with citric acid, and egg beaten up with sugar and water, as aliment. I persevered in this manner during six days.* The patient improved, judging from the change of colour, which appeared to be approaching to the white, called flesh colour, and by the suppression of vomiting. He replied also by short sentences, and was less agitated; but the prostration continued. He was sensible of his inclinations, and the pulse as well as the heat of skin, had each day gained a little. But the abdomen did not yield.—I substituted for one day mead in the solution of gum, and several evacuations resulted.

From that time he continued to improve; the colour became clearer; the patient revived and began to evince some disposition for food. Thickened milk and a return to solutions of gum, were allowed. Still no wine. Shortly afterwards I directed his drink to be slightly aromatized; he experienced no ill effects from it; his strength continued to increase.

Such was the situation of Sauriot on the sixteenth day of the disease. He might have passed for convalescent. Whilst I was reconducting him to the ordinary food of a person in health, he experienced a kind of relapse which I attributed to the too early use of meat. This accident, which consisted of febrile action accompanied with nausea, colic and wind, yielded on the following day to a diminution of food and to vegetable regimen, without any purgative being required. Sauriot continued to gain strength and left the hospital on the 27th of August, one month after his entrance and the thirty-ninth day of the attack.

Observations.—I have explained in relating this case, the motives which induced me to prefer the debilitating to that of the tonic treatment; it appears to me, however, that it may still be useful to add some remarks upon the distinctive characters be-

* A few leeches applied to the epigastrium would have facilitated his recovery. Nevertheless, it took place, and I have cured many others without taking blood.

tween gastritis and adynamic fevers,* and upon the complication of these two diseases. These reflexions are solely intended to elucidate the theory of the treatment.

To be as brief as possible upon this point, I would observe that pain in the stomach is the only evidence which can point out to the observing practitioner, that the adynamic symptoms which he has before him are not the effect of putrid fever.† Sauriot was debilitated, but he was in pain, and if he had a little strength remaining, use could be made of it in obtaining from him the indication of the part from which his suffering emanated. This part being known as the most sensible of the economy, could not the general prostration be attributed to its influence? Without doubt it could, especially as several other evidences of putridity were deficient, and the patient was one of those men of relaxed and tender tissue who are easily overcome by pain.

Every consideration is important when delicate shades of disease are in question; but that of the temperament is the greatest, especially when the disease to be recognised has no other symptom than pain. Each individual having his particular manner of feeling, his peculiar attitude when suffering, his mode of relating it, it is to the interest of the physician to familiarize himself with the physiognomy and language of every one. He will not be long in discovering, by pursuing this study, that internal actions sympathetically excited by pain, correspond to the external in each constitution. He will soon see that in the dull and taciturn man, pain does not greatly accelerate the pulse, whilst it excites it in the sanguine and in him who is kept in perpetual agitation by external impressions, &c. It is from the difference of temperament, that almost all varieties of diseases proceed. In acute

* It is very easy to confound them, and I am persuaded that it occurs oftener than is imagined. M. Tartra saw a woman poisoned by nitric acid, who appeared in such a state of prostration, and with so little pain, that the physician who was in charge of the Hôtel Dieu, took the disease for an adynamic fever, (opera citata.)

† These signs are those of the predominance of irritation in the stomach: but when it is most active in the small intestines it is most frequently unattended with pain, and the group of symptoms which result correspond precisely to those designated by the words *adynamic*, *putrid*, *typhus* fevers, when the disease has reached its greatest intensity, for in the commencement they represent gastric or bilious fevers.

phlogosis of the lungs, all constitutions appear sanguine; but in that of the gastric organs, each has its own peculiarities. This will easily be judged of by a comparison of the cases contained in this volume.

However, notwithstanding these differences, the treatment is still the same. This I will make clear by the following case, which may be compared to that of M***, whose temperament was directly the reverse of that of the patient who is the subject of it. I have selected this case, because the gradation of predisposition, and the action of the last determining causes may be positively seen. In it a shade of *chronicity* may also be observed, coincident with the modulation of the sensibility of the subject. This grade, less defined and even rather obscure, points out the necessity of patience. We have much need of it in the treatment of chronic gastritis.

CASE XXXII.—*Acute gastritis preceded by long irritation of the stomach.*—M. P..., holding an honourable post in the second corps of the grand army in Friouli, thirty-nine years of age, height rather below the medium, body robust and muscular, but deprived of fat, taciturn disposition, and concentrated sensibility, complained, during the heat of the summer of 1806, of having lost his appetite. Food remained a long time in his stomach, and he was very costive. It could also be observed that he was becoming pale and emaciated.

I advised him to dilute his wine considerably with water, to abstain from meat for some time, and to discontinue the use of coffee and of brandy, which he was in the habit of taking on finishing his meals.

He only followed a part of my advice. He could not resolve upon abandoning the coffee and brandy. During the remainder of the summer he was constantly somewhat incommoded by the sensation of weight in the stomach and constipation, and did not enjoy his accustomed strength. He eat very little, and but seldom with appetite.

The first appearance of cold weather having abated his gastric uneasiness, M. P***, resumed his former regimen, which consisted in drinking at his meals red wine, loaded with colouring matter, without water, and in taking upon the conclusion of his

dinner a cup of coffee followed by a glass of rum. He was not addicted to any excess, and was not accustomed to drink fermented or alcoholic liquors between meals.

After continuing this regimen for about two months, it was remarked that he eat less. The habitual costiveness peculiar to his temperament became more obstinate. His bowels were no longer opened, except from the operation of enemata. He felt as though there was a barrier placed across the middle of his chest, and an obstacle to the passage of food which he sometimes ineffectually endeavoured to swallow.

After having been thus predisposed during nearly five months, his appetite failed altogether, and for three days he restricted himself to soup or potage of vermicelli, and to drinking warm, sweetened wine and water, in the hope of reëstablishing the tone of his stomach. This kind of treatment soothed him a little; he returned to his ordinary diet, but he eat little, and his digestion was still painful.

On the 23d of January, 1807, having eaten at his dinner some mouthfuls of teal, he felt, during the night following, more incommoded than ever. It was then that the irritation, hitherto chronic and latent, appeared to take on the characters of acute phlogosis. The patient was constantly harassed by a very uncomfortable weight in the epigastrium, with the sensation of a transverse bar; by uneasiness; by irregular rigors, followed by a considerable flush, which coloured the cheeks and disappeared to give place to a chill, when he changed his position in bed. These alternations were even so intense the two evenings preceding that in which I was charged with the treatment of the case, that many persons thought they recognised intermittent fever.

When I was sent for on the third day, counting from the repast previously mentioned, the patient had circumscribed florid cheeks, doleful countenance—altered physiognomy, dry tongue, slightly white in the middle, but not coated—rather fetid breath. He observed that every thing he swallowed remained like a stone in his stomach, that nothing passed through him, and that he urinated very little. His pulse was tense, vibrating, full, and rather frequent; skin hot and feet cold. The patient was continuing the use of weak sweetened wine and water. I recommended lemonade; he remarked that he had tried it made with warm

water, and that he could not digest it. I ordered it to be made of cold water, and a spoonful of a potion composed of the oil of sweet almonds and the syrup of lemons, to be taken every half hour; these prescriptions having been conformed to, the night was passed with less pain than the preceding.

The next day the pulse had lost a little of its tenseness, the feet had regained their heat, and the chills had not reappeared. The sensation of weight in the epigastrium had been diminished, as the patient thought, by pretty free eructations. I allowed a small quantity of chicken broth, and I ordered emollient fomentations to the epigastrium and an oily emollient enema. On the evening of the same day, the pulse instead of increasing, as was expected, had abated still more. No chills, diminution of uneasiness, a free discharge from the bowels, and a much more free discharge of urine.

On the following day, fifth of the acute stage, the pulse was scarcely febrile; it only retained a little tenseness. (It must be remarked that all the organic actions were indolent in this individual, whilst they were constantly excited in the one of Case 28, which may be contrasted with this.) The heat of skin was natural; the broth had been freely discharged; the anxiety no longer continued; but the sensation of weight had only slightly diminished. It appeared to him as if his stomach was corked up. This is the expression of M. P. . . ; it expresses remarkably well that constriction of the stomach which was demonstrated in the case of Corbolin:

Nevertheless our patient had regained a very good countenance, good spirits, and hope. It became necessary to change and vary his drinks; he was left at liberty to choose between the syrup of vinegar or currants, and the solution of gum slightly emulsionated. A weak vermicelli was well received and well digested.

On the sixth, amendment, the sensation of weight much less. A spontaneous and copious evacuation. Soup anxiously wished for twice, and agreed very well. Orgeat was adopted for the day.

On the seventh day, three evacuations, two of which were spontaneous, and the third was produced by an enema, because he had felt some smarting at the fundament; slight colic; flatus in the intestines. The evacuations were bilious and fetid. As he had

still some fever, thirst, and chills, two ounces and a half of manna, and six drachms of tartrate of potash were prescribed for the next day. It was evident that the lower portion of the intestines required evacuation. Thirst during the night.

On the eighth day nine evacuations without pain, from the effect of the purgative; they were nearly entirely bilious. The stomach had been at first irritated by the medicine, but since it had produced its effect, there only remained a little thirst. No febrile action, orgeat, lemonade, soup.

On the ninth, he only complained of having the stomach still slightly corked up.

Reckoning from the tenth, there still remained debility without thirst—want of appetite. Occasional night sweats. The stomach would only receive gruel or very light porridge and jelly-broth. The patient wished to add to his regimen a few spoonfuls of the sweet wine of Cyprus or of *Piccoli*;^{*} they were at first permitted. He also wished to breakfast on coffee, which gave him pleasure for a few days. But the return of the gastric weight, acid eructations, uneasiness, with a disposition to chills, obliged him to renounce these collateral tonics, and to content himself for some days longer with syrups and jelly broths.

Two or three days afterwards he wished to indulge in the use of meat, but colics, bilious and fetid evacuations resulted, and the stomach indicated by a sensation of fulness, particularly in the morning, that it was still too irritable to admit of every kind of nourishment. In consequence of which M. P. . . again returned to soups and mucilaginous preparations, in order to allay the irritation which took place very speedily. Notwithstanding, on the twentieth day, he could support soup only three times a day, it is true, pretty rich, for his appetite was very good. He was obliged to make use of acidulated or demulcent drinks.

On the thirty-fourth day, 24th of February, M. P. . . was very well, and had recovered nearly all his strength. His appetite was very great: however, he could not yet support the constant continuance of animal regimen or pure wine. But by following a regimen proportionate to the strength of his stomach, he ultimately became restored to the most perfect health.

Observations.—This disease elucidates several points of doc-

^{*} Spirituous wine of the country.

trine which every moment find their application in practice. Acute gastrites, quickly determined by very energetic causes, have easily yielded, and in a very short time, to the influence of demulcents. This one, long exasperated by regimen, it is true disproportioned to the susceptibility of the stomach, but into which entered no excess, and occurring in an individual in whom the organic actions were slow, obstinate, and in some respects habitually painful, developed itself with difficulty, remained but a short time in the acute stage, and was conducted to a radical cure only by dint of patience and perseverance in the diluent and sedative mode of treatment.

It may be judged from the effect of the wine and coffee, even by the purgative, although it was necessary, how long the cure would have been retarded, if there had been vacillation in the treatment, and if that plan which is termed *prescribing for the symptoms* had been pursued. Would not M. P . . .; tormented in different ways, by substances of opposite properties, have passed from a state of tranquillity to one of excitability, or at least to one of uneasiness? Would he not have felt great anxiety respecting his future state? And would not the organ of digestion, constantly increased in susceptibility, have awakened a great number of sympathies, which, perhaps, would have remained forever suppressed?

Is it not in this manner, that particular hypochondriacal dysenteries are kept up, which if examined attentively, would be detected as genuine chronic gastrites? But we shall study hereafter that degree of irritation: we are now only treating of acute gastritis.

Stimuli are dangerous, during the convalescence of these affections, in proportion as the phlegmasia has been decided, and in proportion to the shortness of the time elapsed since the disappearance of the alarming symptoms; but precautions are also necessary for a much shorter time in these cases, than when the gastritis has been less violent and has continued for a length of time, especially if the state of predisposition has been kept up a very long while before the disease broke forth. In fact, I could allow wine, without any inconvenience, four or five days after the disappearance of the reâction to M . . ., (Case 28,) to Sau-riot, (Case 29,) and to several others whom I have not mentioned. This liquor was introduced with more difficulty in the case of

Taconin; and M. P. . . , in whom the disease had been excited by a long abuse of stimulants, during a warm season, could not make use of it or of meat, until after several months convalescence.

The same gastric susceptibility will be observed in the subject of the following case. The symptoms were even much more intense, and the disease continued a longer time in the degree of activity, entitled to the name of *phlogosis*, which was indicated by a more prolonged febrile action, with more determined pain. These differences, no doubt, arose from a more irritable constitution, and particularly, from the first symptoms not having been suppressed as quickly as in M. P. . . . There resulted definitively a more marked shade of chronicity, which prepared us to see this disease indefinitely prolonged, until the moment when the treatment was adapted to its character.

CASE XXXIII.—*Chronic gastritis*.—Danton, twenty years of age, a soldier in the ninety-fourth regiment, chestnut hair, pale complexion, rounded form, delicate limbs, rather homesick, marching in the capacity of a conscript, to rejoin his corps at Udine, was compelled from very violent and obstinate pain in the stomach to enter the hospital of Brescia, towards the middle of November, 1809. He did not vomit; but he had no appetite, and felt much worse during digestion. After remaining eleven days, he left the hospital quite as ill as when he entered it.

Having reached his corps, he continued to experience the same suffering; he became emaciated, and so weak that he was obliged to enter the hospital at Udine, on the 26th of December, the forty-second day of the disease.

He appeared of a leaden, earthy paleness, sad, oppressed, motionless, without appetite, constipated, and reduced to the commencement of marasmus. He complained of dull and deep-seated pain in the epigastrium, accompanied by constant uneasiness. This region was slightly tense and renitent, and painful upon moderate pressure. The pulse was small, rather tense and more frequent, than in the physiological state. The skin seemed also to impart to the feel a dry heat, greater than comported with the strength of the patient. The frequency of pulse and heat of skin manifestly increased during digestion.

Gastric irritation appeared to me to be the only cause of all these infirmities, and I was of opinion, that mucilaginous, emol-

lient and vegetable medicines, and aliment alone, could remove from the mucous membrane of the stomach, that excess of susceptibility which opposed itself to nutrition.

I confined him for two days to the solution of acidulated gum and to vegetable soup, and afterwards allowed him thickened milk as nourishment. He went on well.

Wishing to procure him a little sleep with antispasmodic and anodyne draughts, an exasperation resulted, which compelled me to confine my treatment to pure and simple demulcents. In three days the pain was nearly dissipated. It was then the sixty-third day of the disease.

On the sixty-eighth day there was no longer any uneasiness, tenseness, or pain upon pressure. The pulse was not frequent; the complexion assumed the hue of health. Appetite—vegetable regimen, but rather less severe; still no wine. On the seventy-fourth day, perfect convalescence. Animal food—wine.

On the seventy-fifth day, diarrhœa—symptoms of gastric derangement.—Return to gruel and to mucilage. On the following day, same state as before the accident. Care not to augment the nourishment so rapidly and to return to animal regimen more slowly. The complexion became again, for several days, dull and earthy. On the seventy-eighth day, a small quantity of wine. On the eighty-eighth day, he had regained his strength, and digested meat once a day. He was discharged in very good condition.

Observations.—This disease gave me much trouble and anxiety, to which I have not alluded in reporting its history, although I have a very minute record of it, as those kind of details, too often repeated, become tedious and irksome to the reader. I shall confine myself to remarking, that the activity of the paroxysms of hectic fever and the excessive alteration of colour, made me for a length of time, dread disorganization; that in addition to the sensibility of the epigastrium, there was a certain painful renitence to the touch, which increased my uneasiness, by directing my mind to peritonitis; and that, after having triumphed by internal and external emollients and diet, over symptoms of the most alarming nature, I saw them reappear the moment I increased the nourishment or gave wine in its pure state.

This case is one of those which most reassured me respecting

the subject of disorganization of mucous membranes, and which induced me to refer, more or less, the febrile action and intensity of sympathetic nervous affections, excited in other parts, to the pain of the papillæ. Hereafter, the deterioration of nutrition and the permanent alteration of the colour of the skin, will be the only symptoms which will induce me to suspect the irreparable destruction of the inflamed tissue. They appeared in Danton, but they did not hold out against the emollient treatment. Therefore, a fatal presage should not be drawn from their existence, until they refuse to yield to the treatment known to be the best for the disease which produces them.

The activity of the circulation which could be remarked in Danton, and which differs so materially from the preceding patient, is a peculiarity of temperament which exacts more assiduous attention, for the powers of the system are more easily prostrated in such persons, than in those in whom the functions are performed slowly, but in whom the muscular fibre is very rigid. It also connects the gastric irritation with those which are complicated with hæmorrhagy. Thus, as an example of this other shade of gastric susceptibility, and of the curative means which are appropriate to it, I shall join to the history just read that of a case of hæmatemesis, which was followed by very similar symptoms, and equally difficult to cure. Physiological physicians cannot object to my placing hæmorrhages of the stomach in conjunction with phlogosis of that viscus. Is there not the same analogy between them, as between hæmoptysis and chronic inflammation of the parenchyma of the lungs? As to the treatment, it is fundamentally the same; and if there are some features of dissemblance, it is by discussing the facts, that they will be discovered and satisfactorily accounted for.

CASE XXXIV.—*Hæmatemesis, followed by chronic irritation of the stomach.*—Mathieu, twenty-six years of age, a grenadier of the ninth regiment, dark hair and well developed, pale complexion, active sensibility, was attacked on the 8th of January, without any preliminary symptoms other than pain in the stomach and nausea, with a very profuse vomiting of blood. He threw up, mixed with food, arterial blood, and several clots, some of which were large and of a dark colour. The vomiting was repeated three times in the same manner, with the interval

of a day, and was always followed by fainting and considerable coldness of the extremities. At last, Mathieu became so ill that he was obliged to enter the hospital of Udine, on the 14th of January, 1807.

On his arrival he was pale, his countenance was altered, he had violent head-ache, constant nausea, sensation of fulness in the region of the stomach, and of weakness and uneasiness, which depressed his spirits. He was in constant fear of fainting. The pulse was small and frequent, and the skin very hot. He was put on the use of a solution of gum acidulated with citric acid. No food.

The next morning, seventh day, the stomach had relieved itself a little without sensible evacuations; the head-ache had nearly subsided, the fear of fainting no longer continued. I directed the solution of gum Arabic to be aromatized, and a mild etherized gum julep. I ordered external frictions of alcohol and laudanum to the epigastrium, and an irritating pediluvium.

On the eighth day, I observed burning heat with increase of pulse: the patient felt better, but there had unexpectedly occurred during the night, a pretty severe cough, with a purely mucous expectoration. He mentioned to me, that he had had two previous attacks of peripneumony. I abandoned the pretended antispasmodics, and returned to the use of acidulated mucilaginous drinks, and continued them throughout the treatment. I pursued also in the administration of aliments, the same gradations which I had adopted in gastritis, and the following are the results of that method.

On the ninth day, frequency of pulse, uneasiness, mouth very foul, obstinate head-ache, constipation.—An enema operated freely on the bowels.

On the tenth day, all the symptoms diminished; slight appetite. Until then he had only taken broths. I ordered thickened milk. He continued to improve.

On the sixteenth day, after variations in the symptoms, some of which, the head-ache especially, and the frequency of pulse, had undergone several momentary exasperations, the countenance began to assume a more favourable expression, and Mathieu was able to leave his bed. His mouth was still bad when fasting in the morning, and the tongue white and coated with mucus.

On the nineteenth day, frequency of pulse diminished, mouth

improved, appetite excellent. The complexion had, within the last few days, assumed the hue of health. The patient could not yet support animal food.

On the twenty-eighth day, although he said that he felt well, I remarked a frequency of pulse and a heat of skin, which alarmed me. These symptoms proceeded from the stomach, for Mathieu had not coughed for a length of time. He confessed that he had omitted to mix water with his wine, as he had hitherto done, according to my express recommendation.—Diminution of food, no meat, acidulated drinks. The frequency of pulse diminished, but did not disappear. His strength, however, increased.

On the thirty-fourth day, observing that the frequency of pulse did not cease, that the complexion no longer continued to resume the hue of health, that his strength increased but slowly, I suppressed the use of wine altogether, continuing the vegetable regimen. He felt very well.

On the forty-seventh day, the frequency of pulse, which had hitherto continued, and which had frequently presented, particularly in the evening, an alarming degree, began to diminish. Mathieu could not eat more than half allowance, without incurring the danger of experiencing some gastric symptoms, which transformed the frequency into true febrile action. He had almost constantly lived upon vegetables, and had made constant use of an acidulated, oily, and mucilaginous draught, from which he remarked that he procured quiet nights, and great relief of the pain in the head, which was ready to reappear upon the slightest provocation.

On the 2d of March the increase of pulse in the evening was no longer perceptible. Mathieu had regained his strength, and for the last six days could bear three-quarter's allowance. His colour appeared good. He wished to be discharged: I consented, and several months afterwards he had not experienced any relapse.

Observations.—Who can refuse to acknowledge in this disease, an exasperated irritability of the internal membrane of the stomach? Did not the pathological lesions demonstrate it by a concurrence with the success of the treatment. Hæmatemesis, will therefore be always considered as gastritis by the *therapeutist*. This conclusion appears the most consistent; but does not the physiological physician observe certain differences deserving

of notice? and may not conclusions be drawn from them, in favour of some particular medicines? Let us discuss this proposition.

I am unacquainted with the first organic cause of hæmorrhagies; but during their existence, and whilst the patients are exposed to a relapse, frequency of pulsation, and an artery, the systole of which is very strong, and of which the tunics contract and expand in a manner to give to the pulse great activity, are observable.* These phenomena portend, 1st, that the dilatations and contractions of the heart are free and easy, and are made in very quick succession.† 2d. That the vibrations of the capillary arteries, which can feel the impression of the blood, and consequently act to the degree in which they are effected, are equally free, easy, and quick in their action.

I shall infer a third conclusion, viz. that the blood circulates rapidly in the ramifications of the circulatory system. Let us first compare these phenomena with those of inflammation, since we have compared them with hæmorrhagies.

In inflammation, generally, we meet with frequency and activity of the pulsation; but the freedom is no longer the same; the development of the arterial tunics seems to be arrested by a power which resides at a distance from the heart in the sanguine capillary tissue.‡

There is, therefore, in hæmorrhagies, as well as in inflammations, an excess of action throughout the circulatory system; but in hæmorrhagies this excess is of a nature to hasten the passage of blood through the capillary fasciculi, and even to force it out from the most unresisting parts; instead of which, in inflammations, the excess of action is directly of an opposite nature; it coëxists with a tendency to contraction which seems to arrest the blood in most of the ramifications of the arterial system; so that, far from es-

* I only allude here to hæmorrhagies which take place on a surface communicating with the external, or to hæmorrhagies of the mucous tissue, properly so called. The blood remaining on the surface which has exhaled it, by irritating it, by depressing the viscera in the hæmorrhagies of the serous membrane, excites painful sensations, genuine pain, which impedes the freedom of the circulatory action of which we are here speaking.

† Doubtless, and it appertains, ordinarily, to a state of hypertrophy of the heart.

‡ The constriction of pulse can only depend upon the heart.

caping from the irritated part, it is arrested and accumulates in it.

Has pain no share in producing this difference? Let us explain ourselves.

The part from which the blood escapes is never in a very painful state. Women who have painful menstruation, tell us, that the excretion only freely and copiously takes place when the pains in the loins begin to diminish.*

The organ in which an inflammatory action is established, is always the seat of some pain. Now the severer the pain is, the less free is the circulation. Let us prove this proposition by facts.

Pneumonia is, of all phlegmasiæ, that which excites the circulation the most, because it involves a greater number of sanguine capillaries; pneumonia only presents us, when it is very painful, with a contracted, small, and frequent pulse, which is particularly obvious when the pleura partakes of the irritation of the parenchyma. Peritonitis depresses the circulation when it is recent and painful. Gastritis and enteritis produce the same effect. We have only observed the pulse soft and full in gastritis, when complicated with irritation of the pectoral parenchyma. The pulse is tense, seldom quick, and never free, in rheumatism.

On the contrary, the phlegmasiæ which present us with the most developed pulse, are those in which the pain is not extreme; such as simple pneumonia and phlegmon or phlogosis of the cellular tissue. Bleeding in these diseases always gives to the pulse strength and elasticity. Irritations of the mucous membrane of the primæ viæ, which now engages our attention, present us with a developed pulse, when, without being painful, they are extended and fixed in sanguineous individuals, and it may be always rendered contracted and convulsive, by exasperating the pain.

The pain of the irritated part sympathetically communicates itself to the heart and to all the extremities of the circulatory system, through the medium of the nerves which enter into their substance; pain, it must be repeated, can therefore itself establish

* There are many in whom the pain continues as long as the hæmorrhagy. Perhaps this pain may also retain the blood by producing constriction of the heart, and thus prolong the sufferings of the patient.

a very great difference between the various affections of the sanguine capillary system. It appears that when moderate, it accelerates the action of the fluids, and when excessive it abates it by the state of erythism and constriction which it keeps up in the arterial capillaries. Would moderate phlogosis then have a tendency to produce hæmorrhagy?..... Certainly it has that tendency, and I have seen it several times produce this affection, provided the subject was predisposed by temperament.

Do hæmorrhages then only differ from inflammation in the degree of suffering of the irritated part?

There is no doubt that this phenomenon establishes a very great difference between these modes of lesion in the same system; but there must exist others; for why do not hæmorrhagies take place when the sanguine capillaries are locally irritated in a very moderate degree? To reply to this question, reference should be had to the constitution of the individual who receives the irritation.

Profuse hæmorrhagies seldom ever attack any but peculiar constitutions, and it is in this that they differ the most from phlegmasiæ. The temperaments which are exposed to them are very badly expressed by the name *sanguine*. In individuals subject to hæmorrhagy; I have always remarked the following attributes: relaxed tissue, active sensibility, lively imagination and passions, pulse habitually frequent, quick, and active, extremities warm, easy nutrition, indicated by the rapidity with which they regain their losses. The reünion of these attributes constitutes a temperament which merits the name of *nervoso-sanguine*.

It is generally met with in youth after puberty. It predominates in women, in individuals who are rather large than small, in whom the chest is narrow or of medium size, the limbs small and rounded, skin transparent, injected, and of a loose tissue, movements easy, and the cellular tissue not too predominant. This is a constitution for profuse hæmorrhagy.* It is also subjected to phlogosis.

Individuals in whom the chest is large, muscles firm and strongly expressed; those who with an immense frame and large

* Especially if there should exist hypertrophy of the heart.

muscles, have a great quantity of fat, may also present to us a rich and very sanguineous structure; but they rarely ever experience any very great loss of blood.*

Submit an equal number of individuals of each of these constitutions to the influence of the causes which are unanimously admitted as the most proper to excite the sanguineous system to a great degree of action, such as an abundance of heating and succulent food, spirituous liquors, and the most violent passions, &c. at the end of a certain time, there will arise in the nervous, sanguineous, and delicate, phlogoses and hæmorrhagies: in the sanguineous, large, and robust, plethora, *ad vires*, and inflammations. If they should have hæmorrhagy, it will only be a trifling bleeding from the nose; if, towards the decline of life, they should be subject to hæmorrhoids, it must be referred to another mode of action than that which is here developed;† but they seldom lose much blood by this means, unless their mode of life has given them the constitution of the preceding individuals. Therefore profuse sanguineous hæmorrhagies only belong to delicate nervoso-sanguine temperaments, either natural or acquired.

There exists, therefore, in the vessels of certain individuals of that constitution, a kind of irritability, which induces them to vibrate readily and freely, and when stimulated too actively by the accumulation of blood, to relieve themselves externally rather than contract upon their contents. The same occurs when the exciting cause acts upon the nervous system; and in both cases the arterial tree, very much excited even in its most extreme branches, is disposed to exude blood, without much pain, upon surfaces where certain local irritations may call it forth. The experiments of Bichat tend to prove, that this exudation most frequently takes place, without rupture, from the cavities of certain vessels not in the least destined to pour out blood.

As soon as organic action has taken a certain direction, the blood seems to abandon all the other portions of the capillary system; the external parts become cold, and the sanguineous activity seems concentrated around the spot which gives issue to

* They also experience them, if they have in addition to a large heart, a very decided nervous susceptibility. I am aware that this combination is rare; but it does exist, and I have several times met with proofs of it.

† Hæmorrhoids frequently correspond to gastro-duodenitis, which renders at the same time the liver swollen and painful.

the blood. This spasm is not the effect of pain; it indicates an hæmorrhagic tendency.* As soon as this tendency is suspended, the circulation recovers its natural action, and heat is uniformly distributed. The continuance of this sanguine excitement without being provoked by pain, warns us to anticipate the return of hæmorrhage, because it proves that the sanguine capillaries continue to be too sensible to the stimulus of the blood which passes through them. It also gives us reason to dread an inflammatory explosion fatal to the viscus most irritated, as we have explained elsewhere: such is the great analogy which exists between phlogoses and hæmorrhagies!

According to this theory, it would appear that hæmorrhagies may be considered as slightly painful inflammations, which from a predisposition of the vessels allow the current of the blood to escape externally, whilst the phlegmasiæ generally retain it.

If this be so, to arrest an hæmorrhage it will be sufficient to create pain upon the surface from which it takes place; experience also frequently points it out to us. How do cold and styptics act, if it be not by producing a disagreeable impression, a true local pain, (for it is not necessary that the sensorium should perceive it,) which determines the contraction of the capillary vessels? If a surface from which the blood flows can be inflamed, by rendering it painful, the hæmorrhage is checked.

Is it not by an analogous mode of action, that is to say, by greatly augmenting the sensibility of the mucous membrane of the stomach, that a glass of brandy or rum arrests hæmatemesis? But I leave the Brunonians the pleasure of performing this experiment, preferring to diminish action rather than to produce phlogosis, for the allaying of sanguineous effusions. Is it not also in accordance with the same laws, that hæmoptysis ceases the moment that febrile heat makes its appearance? Does not that heat indicate that the irritation of the capillaries of the mucous membrane of the bronchiæ is carried to the degree of phlogosis? Is hæmorrhage seen to return in the course of the disease, unless from the rupture or erosion of some vessels, as long as the hectic fever is rapid and the heat is intense?

He who has carefully observed hæmorrhagies, and reflected deeply upon their mode of action, will not say that those called

* This can only be considered as a local organic irritation.

passive, form an exception to the laws which I have endeavoured to unfold. It is evident to all those who have watched hæmorrhagies until they have produced death, that they constantly recur in the same manner. To be convinced, it is necessary to have the patient constantly under immediate observation: as long as the hæmorrhage continues, the extremities are cold and the pulse is obliterated; all the action of the sanguineous structure seems concentrated in the capillaries of the part from which the blood flows. But when the discharge has ceased, the pulse rises; and, although it is feeble, and the artery seems rather filled with gas than with blood, pretty active vibrations are observable. As long as this mobility remains evident, fear should be entertained of a relapse in passive as well as in active hæmorrhagies. The longer it is deferred, the more the pulse regains its consistency. If the patient be young, and he retrieves the loss speedily, the heat returns, and the hæmorrhage reappears with the restoration of strength. Many patients present until their dissolution these alternations of excitement and collapse. Lallemand, (Case 13,) was seen languishing, infiltrated, and very near his end, presenting a pulse of sufficient power to still warrant some hopes of recovery.

This is the state of things, as long as the patient still retains a certain quantity of blood, and as long as he recovers his losses speedily. That period past, the excitement is confined to the capillaries of the part, but it is still governed by the same laws. Frequently, it is the stimulus extended to the economy by a more or less distant inflamed cavity, which causes the blood to ooze out, until the last moment. There is no longer any general fever, for there is no longer a sufficient quantity of blood to stimulate actively the centre of circulation; but there is a capillary fever, sympathetically transmitted from the suffering part to the seat of hæmorrhage, through the medium of the nervous system, which interlaces throughout with that of the circulatory system.*

Let us, therefore, no longer say, that local debility permits the *vis a tergo* to force the blood out of the vessels. The defect in resistance only exists in the capillaries which have been dilated by pressure, &c. such are those of the uterus at the conclusion of la-

* Some will deny this proposition; but I do not advance it without a motive, and I hope, in time, it will be admitted as incontestable.

bour, those of the anus, in men who are constantly constipated, those of the lungs, in cases of aneurism of the heart, &c. But spontaneous hæmorrhagies, and liability to change of seat, cannot be attributed to local debility, for it would be necessary to suppose it transportable from one place to another, which is inadmissible. Besides, vessels which are only weakened do not permit the blood to penetrate them; they diminish in calibre, and if the asthenia is complete, they close and become obliterated. The fluids, whichever they may be, can only circulate through natural channels. Let us acknowledge that there is but one principle which presides over all spontaneous *profluvia*, and that the individual whom we say is affected with hæmorrhage from a defect in local power is only in fact attacked by an hæmorrhage with a defect in the general powers of the system; but let us endeavour to find the application of this doctrine to therapeutics.

As the frequency and free development of the pulse are the particular symptoms in reference to hæmorrhagies, and that as long as they continue, a relapse is to be dreaded, it is necessary to study to remove them. It is only by arresting them, that a radical cure can be obtained. We have, it is true, remarked that an hæmorrhage might be arrested by augmenting the pain of the part from which it flowed; but this means is only applicable to certain surfaces; it is not adapted to the mucous membrane of the stomach; it has the inconvenience of exciting phlogosis, and that may be, in certain cases, more formidable than the loss of blood; moreover, it could only act as a palliative. As long as the arterial excitement continues, hæmorrhage is always to be dreaded; now, should it find its issue closed, the action would be diverted to some other place, and the disease would appear with the same degree of energy.

Sometimes, this change of seat is detrimental to the economy; for example, an hæmoptysis would be more formidable than an hæmatemesis, because the mucous membrane of the bronchia is better furnished with sanguine capillaries, from which results a more abundant loss, and because phlogosis is more readily excited in it, and more dangerous than in the mucous membrane of the stomach.

The radical cure of hæmorrhagies, therefore, consists in allaying arterial excitement. But in order to succeed, it must be done early, previous to the loss of blood having prostrated the sys-

tem and predisposed the body to infiltration. We have already given this advice when on the subject of phlegmasiæ. They are sometimes antiphlogistically treated without success in the advanced stage, either because the prostration is too great, or because the fear of debilitating renders us circumspect, and induces us indiscreetly to resort to irritants.

Next to bleeding, which is the best agent as long as the patient is plethoric, come aqueous drinks, atmospheric cold, cold baths, and acids. Emollients, which hold perhaps the first rank in the treatment of phlegmasiæ, are in that of hæmorrhagic diatheses far inferior to cold and acids.

I have observed that mild acid drinks diminish frequency of the pulse. Cold acts in the same manner; every one knows that the action of the heart becomes less at the moment of immersion into a cold bath. If these agents are promptly administered, and are aided by absolute diet, there are but few hæmorrhagies that cannot be checked, unless the hæmorrhagic irritation of the arterial system should be kept up by a malignant febrile principle, or by the stimulus of a distant inflamed focus. If this focus be disorganized, there is no success to be expected from the means now proposed. If it be not so, the treatment of hæmorrhagy, being also that which is applicable to phlegmasia, a cure of both affections will be accomplished.

By dint of observation, I have learnt the necessity of not nursing the powers of the system too carefully in incipient hæmorrhagies. Physicians are anxious that an equal degree of energy in the arterial action should be distributed to every part of the body, in order to destroy the spasm, which it is said, prevents the blood from circulating through the other vessels, and causes it to flow towards the seat of the hæmorrhage. Consequently, recourse is had to jelly broths and to wine, with the intention of giving to the vessels the necessary action for sustaining the general circulation; and, in order to effect a determination to the capillaries of the surface, alcoholic stimuli and opium, are administered under the name of *antispasmodics*. Frictions, blisters, and warm pediluvia have been added to this practice.

Of these means I have never found any truly beneficial but the three last: I suppose they act as revulsives; but this revulsion, to be effected with safety, requires that the powers of the system should have been diminished. The irritation of warm pediluvia

and of blisters may become injurious when the sanguine system is very energetic, and the sensibility very active. Mild frictions are preferable. They are powerfully antispasmodic when employed uniformly in the same direction, and for a length of time. I have never been able to attribute a recovery to the effect of medicines called *antispasmodic*, and I have often remarked that they augmented hæmorrhagies.

I have also used, upon the most respectable authorities, the conserve of roses, combined with nitre and pills of alum. These medicines, which can only be useful when the powers of the system are entirely prostrated, act by a painful constriction of the stomach, which tends to depress arterial action. Therefore their mode of action resembles that of the painful phlegmasiæ, which we pointed out as opposed to hæmorrhagies. But neither these phlegmasiæ, nor the contractions of the stomach, which the patient complains of, when we wish to persevere in the dose of astringents, are efficacious in arresting the flow of blood, when the hæmorrhagic disposition is of long standing, for in that state, all pain excites the effusion of blood, instead of allaying it.

Therefore, as long as the system preserves its energy, it is from refrigerants that we must expect the best effect, and the sooner they are employed, the sooner there will be a probability of success. But how should they be employed?

In the first place, bleeding and the most severe diet do not require much explanation. However, lemonade should be drank in moderation; the sulphuric acid has not answered my expectations; the acetic acid, although it contracts the stomach less, irritates it much more. Other vegetable acids very much diluted are preferable. Cold water may supply the place of these medicines. Fomentations with the cold oxycrate, ablutions of cold water, may produce very violent internal determinations when the circulation is very vigorous; the surface of the body should therefore be gradually cooled, by combining the cold drinks and perfect rest with the external application of cold. With these precautions the circulation may be depressed, and the development of the energies of the system suspended, without being attended with prostration. If this is gradually obtained, there will result no catarrhal affection, and when it is accomplished, revulsives, pediluvia, travelling blisters, &c. may be tried.

It is also at this period that benefit is derived from astringents,

properly so called, that is to say, from substances in which tannin and gallic acid predominate, and among minerals from the different sulphates. The doses should be given in quick succession, but they should be stopped the moment the stomach gives evidence of sharp pain, and acidulated mucilages must be again resorted to. This is plainly saying, that no great benefit will be derived from them in hæmatemesis with a tendency to gastritis. But during this treatment, the strictest regimen should be observed; the patient be made to fast and even suffer a little, so that the uneasiness of the epigastrium conveys its sedative action to every portion of the economy.

Such is the course which I adopt during the early stage of hæmorrhage in general.

When it is necessary to treat an hæmorrhagic tendency which has shown its obstinacy by several relapses, the pulse should be first examined: if it is strong, the complexion healthy, and no tendency to infiltration visible, endeavours should be made by the same means, modified according to the degree of strength, to reduce the action of the arterial system within its proper limits.

If the disease is of longer standing, prostration commenced, and dropsy probable, the strength must be sustained with gelatinous food and a little wine, but very seldom by spirituous liquors. Tonics are only admissible in small doses, and only in sufficient quantity to induce the stomach to ready digestion, without exciting sympathetic irritation in all the other tissues, without exciting fever and occasioning an extraordinary degree of ease or of uneasiness; in short their action ought to be, as it were, local and organic.

It is in this stage that external inflammations, excited by rubefacients and vesicatories of every kind, and by artificial ulcerations of the skin, are useful; they are in fact the principal resource; for the constant use of astringents, tannin, and of sulphates, deteriorate the stomach and cannot be supported. Besides, the constriction which they produce on the tissue of the mucous membrane of the stomach, and which is depended upon to arrest hæmorrhage, is not easily repeated throughout the different tissues, but in proportion as the system is endowed with energy. That repetition is a sympathy, and all sympathies debilitate in proportion as the blood and strength are exhausted. It is therefore better to try the effects of an artificial phlogosis. It

cannot, however, be depended upon. There may be cases in which it promotes hæmorrhagic action, by acting in conformity to the cause which keeps it up. When hæmorrhagies appear very obstinate in this degree of extenuation of the powers of the system, and when the vigour of the pulse seems to contradict the general debility, it is certainly to be feared that an obscure phlegmasia is fomenting the hæmorrhagic action. If any thing of the kind is discovered, the same course should be pursued as recommended in chronic inflammations of the chest or abdomen.

Hæmorrhagies of the stomach and of the intestines have the peculiarity of the blood remaining sometimes on the membrane from which it exudes. The symptoms which accompany this state are, 1st, *those of the actual flow of blood*, paleness, coldness of extremities, obliteration of pulse, and fainting. Whilst they exist, sedative and refrigerant means should be used, if the patient is not too much debilitated, and revulsive if he is already prostrated. Jelly soup and tonics are indispensable. 2d. *The symptoms of irritation produced by the retention of blood* are those of gastric obstruction, foul mouth, thirst, uneasiness, burning heat, and dryness of skin, which is not that of hæmorrhagy, but of *gastric fever*; tenseness of pulse is equally foreign to hæmorrhagic action: sensation of weight, eructation, borborygmi. These symptoms announce that the mucous membrane is disagreeably affected by the presence of blood, the putrefaction of which is hastened by the air; they require the use of purgatives. Manna, castor oil, honey, and other oleo-mucilaginous and saccharine laxatives, are preferable to bitter and nauseous cathartics, or at least they have always appeared to me to be so. After having given these purgatives, the use of acids slightly aromatized, restoring aliments, and stimulating revulsives, should be resumed.

It is time to return to the treatment of phlogosis of the mucous membrane of the stomach.

The cases which we have hitherto seen were somewhat acute, which will suffice to justify, in the opinion of every one, the extreme severity I pursued in the regimen during the early stage. But it will no doubt be thought, that when the disease begins to take on a chronic character, the physician is obliged to relax in the diet, and to combine demulcents with tonics. In order to decide this question, it will be necessary to draw some distinctions.

Treatment of Chronic Gastritis.

When it becomes necessary to determine upon the choice and extent of depletory means, less regard should be had to the period the gastritis has continued, than to the degree of exhaustion and emaciation to which it has reduced the patient. As long as the muscles are not extenuated the patient cannot be considered in a state of marasmus; and although he appears to be in a state of extreme debility, there should be no haste in giving him tonics, for the energies of the system are not prostrated, but suspended in their action by the pain. Under these circumstances, which may be also recognised by the preservation of colour, no fears should be entertained in regard to the use of emollients and diet. Besides, the most chronic gastritis may exist a length of time in a very moderate degree, without interrupting nutrition, or at least sufficiently so, to produce complete emaciation.*

When to the absence of extenuation is added the certainty that the disease, at first trifling in itself, has only been kept up and prolonged by excitants, there is an additional reason for expecting great benefit from the most severe abstinence and aqueous and emollient medicines. In these cases the promptness of the amelioration creates an agreeable surprise, which is rather to be attributed to the absence of all irritation, than to any specific virtues in the medicaments. What can conduce more to the encouragement of the practitioner, than becoming acquainted with the true cause of the extreme debility which alarmed him the instant before? Let us make this more evident by an example.

CASE XXXV.—*Chronic gastritis.*—Meurat, a gunner, thirty-two years of age, chestnut-coloured hair, white skin, dry and muscular constitution, was treated in one of the hospitals of Friouli, in 1807, for intermittent fever, accompanied with vomiting during the paroxysm. Emetics, and afterwards cinchona were used, which readily suppressed the fever. Having returned to his military duties, he felt tolerably well, although his stomach was irritable; but on the fifteenth day after his discharge

* Gastritis, although very painful, coincides, even a length of time, with increased nutrition, and with bulimia; and when it is circumscribed, it may exist several years without impairing nutrition, especially in old age.—(See the propositions of the *Examination of Medical Doctrines.*)

from the hospital, he was suddenly attacked with vomiting of his food, for which he took no remedy: he lived as usual, with the exception of taking rather more wine with the view of strengthening himself. He continued in this state during fifty days; but the vomiting had become more frequent, and being accompanied with very severe pain in the epigastrium, lassitude, uneasiness and debility, he entered the hospital of Udine, the 14th of July, 1807, the fiftieth day of the vomiting, and about two months and a half after the intermittent fever. I observed the following.

Sunken and dull eyes, red conjunctivæ, altered features, leaden-coloured complexion mixed with a shade of ochre, skin in close contact with the muscles, which were not much extenuated, although the subcutaneous tissue had entirely disappeared; the whole body as cold as death, pulse nearly obliterated, extreme debility. He could not support himself either in a sitting or standing posture; he was constantly restless and sighed deeply; he uncovered his chest and extended his arms upwards, as was observed in the case of M. Beau, towards the close of his life. He was also nearly speechless and could not make himself heard except by a few low and badly articulated sounds, which, however, were sufficient to indicate delirium. His actions also denoted it.

He ejected every thing which he swallowed, and when the stomach was empty, retched violently, bringing up occasionally bile or a fluid resembling saliva, perhaps pancreatic juice. The epigastric region was painful upon pressure. The patient had stant occasion to go to the water-closet; but the tenesmus which induced it was only attended with a trifling discharge of bloody mucus.

I immediately put him upon the solution of gum arabic, juleps made of flaxseed tea edulcorated, and for the three first days allowed him only a glass of egg beaten up with sugar and water morning and evening, as nourishment. The skin became warmer.

The fifty-fifth day, fifth of his entrance, the vomiting ceased; he had but two stools, still rather painful; pulse developed, but tense and frequent; skin warm and moist; the delirium had disappeared the day after his arrival; desire for food. The epigastrium was still very painful. An half allowance of gruel in the morning and an egg in the evening.

On the following days, gruel in the morning and broth in the

evening; the same medicines as before. The epigastrium gradually diminished in sensibility. In two or three days all the febrile symptoms had vanished. From that time, the patient visibly began to recover strength, colour and *embonpoint*. The voice was only low and painful during the first eight days of the treatment; in short, in twenty-one days, calculating from his entrance into the hospital, Meurat, having been gradually restored to the use of solid food, at first vegetable, afterwards animal, and to wine, was in very good health, and was discharged on the 4th of August.

Having met him in town towards the end of the same month, I learnt that he continued in good health.

Observations.—It is seen that the irritation of the stomach, which had begun with the intermittent fever, continued rather more than three months, that it had for a length of time a tendency to resolve itself, although the cinchona and bitter febrifuges had at first exasperated it; that it was not sufficiently violent to produce a rejection of all food and considerably impair nutrition, except during the fifty days which preceded the entrance of the patient into the hospital; and that notwithstanding all this, a discontinuance of five days from irritants restored to the patient powers of system very superior to those which he had on his entrance, an appetite to which he had long been a stranger, and the power of easy digestion, of which he had been deprived from the commencement of his disease.

This fact confirms what I have previously said in relation to intermitting ataxic fevers. It is seen that this forms an exception to the ordinary established rule; but it may also be concluded that it is easy to be led astray even by following the progress of the case, unless guided by superior judgment: *experientia fallax*. In fact, the physician who treated this fever might have advanced it in favour of the tonic method, and decided that the cinchona had saved the patient. But I, who after the disappearance of the febrile type, found the local symptom still persisting, I who saw it augment by the treatment which had removed the fever, jeopardize life, and disappear the moment I adopted an opposite method, can doubt the necessity of the cinchona.

But will it be said this case has proved that it was beneficial to the fever. Consequently, although it slightly irritated the sto-

mach, it did more good than harm, since that which it had produced had been so easily repaired. I admit it: is there not, however a method of treating intermittents in which gastric phlogosis is imminent, less dangerous to the life of the patient? Is it not also necessary to be acquainted with the dangers of the purely exciting treatment, either to establish the basis of that method, if it is not known, or to remedy the symptoms which cinchona, properly or improperly administered, may have produced? For it is certain that if, agreeably to the generally adopted opinions, it had been attempted to restore the tone of Meurat's stomach by corroborants, a fatal termination would have been rendered inevitable. From this it therefore always results that there may exist vomiting from phlogosis with intermitting fever, and that cinchona, whilst suppressing the accessions, may add to the danger of the local phlogosis. This fact appears to me well calculated to render the practitioner very circumspect in the use of that medicine, either as a febrifuge or as a preventive to the return of the paroxysm, or as a stomachic in cases of dyspepsia and apyrexia epigastralgia.

But this is not all: it should be remembered that cinchona has not always been as beneficial to the fever itself as it appeared to be in Meurat's case. I have quoted cases in which this medicine suddenly changed the fever to continued, which was not unfrequent during the summer of 1806, at the hospital of Udine. It is therefore sufficiently shown that there is a risk in combating intermitting fevers with periodical vomiting by cinchona, when it is not very positive that the vomiting is rather nervous and dependent on the muscular than the consequence of irritability of the mucous tunic. If the discriminating symptoms of this last disposition should be required, I shall refer for the reply to what I have already observed, inviting every physician to recall all the experience which can demonstrate the impairment of the internal membrane of the stomach and intestines.

How can there be any surprise that cinchona should prolong an irritation which tends to phlogosis, when it has been seen to give rise to it in individuals in whom there was not the least evidence of it upon the invasion of the intermitting fever? I have given examples of it; but as they had a fatal termination, I will add another, in which the recovery proved by the means

which obtained it, that which death made evident by the inspection of the diseased parts.

CASE XXXVI.—*Chronic gastritis*.—Dugat, a soldier in the eighty-fourth regiment, twenty-six years of age, dark complexion, large, fleshy, and robust, came under my care at the hospital of Udine on the 4th of December, 1806, saying that he had been ill six months. He had been at first attacked with tertian fever, and had recovered in three weeks in one of the military hospitals, after having been vomited and purged, and having taken bitters and cinchona. He had been, however, transferred to another during convalescence, on account of a pain in the stomach which deprived him of appetite. He remained eight days in that hospital, and fifteen in another, constantly treated by bitters, cinchona, or vinous preparations, and grew worse and worse. Two months spent with his corps only aggravated his situation; at last he was again obliged to enter the hospital of Udine. On his arrival he underwent the common treatment of gastric affections, evacuants followed by the use of tonics; and twenty days afterwards, chance placed him in one of my wards, in a worse state than he had ever been.*

I observed a man very much oppressed, and so debilitated that he could scarcely move in bed, skin cold, pulse feeble and slow, complexion brown, and mixed with a shade of the rust of iron, vomiting every thing which he took, for nearly a month, and using the water-closet three or four times a day, for a long time. I could not precisely ascertain at what period of the disease this commenced. He was melancholy and desponding, approaching to despair. He only complained of a dull pain across the base of the chest; the last four or five days, he coughed by short paroxysms, without expectoration. He was thin, and even in an incipient marasmus. The epigastrium was painful upon hard pressure only.

* It is thus that routine still pursues until death those unfortunately affected with gastritis. Each new physician whom the patient employs, thinks himself obliged to commence by an emetic, and to follow it by tonics, which he varies in order to find the one which is best adapted to the idiosyncrasy of the patient, and these trials only terminate with life, unless the patient has the good fortune to come under the care of a physiological physician.

I attributed all these symptoms to chronic irritation of the mucous membrane of the stomach; and, notwithstanding the excessive debility, I did not hesitate to put him upon rigid diet and rice water, seconded by a solution of gum acidulated with lemon juice. The vomiting diminished in frequency.

He had entered the hospital on the fourth of December, towards the sixth month of his illness, and nearly the fifth of the gastric pain. Three or four days afterwards, I allowed him gruel. Vomiting very much diminished. One evacuation from the bowels. The pain in the stomach was occasionally violent; but the complexion and the powers of the system improved. Twelve days afterwards, I substituted lemonade for the rice water. Face expanded—appetite increased. From the 18th, he no longer vomited, and only complained of eructating, and of the food returning into his mouth, a kind of rumination. On the 26th, this symptom entirely disappeared. Strength and *embonpoint* were returning. About the 1st of January, 1807, Dugat being nearly restored to his natural colour and *embonpoint*, complained of pain about the false ribs, on both sides. I diminished his quantity of food, which, although still vegetable, had been increased to three-quarter's ration. This symptom vanished in a few days. On the 12th of January he was discharged perfectly reëstablished, and he retained his health.

Observations.—This disease not only points out to us, the abuse that can be made of stomachics, but also the resources of a good constitution. It was the most chronic case of gastritis that I met with at the hospital of Udine, and nevertheless it was cured. What encouragement this success extends in certain cases of endless dyspepsia, which are in vain treated by stomachics! Seven months duration! This is a great length of time! It is very probable that Dugat would have sunk under the stimulants which were lavished upon him, had the phlogosis been violent from the commencement.

This case also proves, that it is extremely difficult to decide upon the existence of disorganization in protracted phlegmasiæ of mucous membranes, especially in robust individuals and who are not yet in a state of marasmus. However, it seems to me, that so much hope could not be entertained, at so advanced a period of gastritis, if the phlogosis had from the first extended to the mucous membrane of the colon. This portion of the mem-

brane does not offer near so great a resistance to it as the other; therefore I cannot quote the cure of a diarrhœa equally prolonged. That which was observed in Dugat's case, was long after the invasion of the gastritis, consequently, the principal point of irritation acted upon the internal coat of the stomach. It would therefore be more favourable for gastritis to precede diarrhœa, than that the contrary should take place; this appears to me an incontestible fact. We have seen gastritis supervene upon the termination of protracted dysentery, and never a recovery. In this case we see dysentery become complicated with long standing gastritis, and yield with as little resistance as the primitive disease. The causes of this difference ought not to be beyond the powers of our understanding.

Independent of the predominance of vitality, which it will be admitted must be in favour of the stomach, I am of the opinion, that the nature of exterior bodies which impress the two different surfaces, must give one of the motives of their lesser or greater resistance to disorganization.

Let us suppose them to have been equally treated in an improper manner, whilst in a state of inflammation: the mucous membrane of the stomach only receives mixed bodies, as yet well united, in which decomposition commences, but which tends to recomposition conformably to the demands of the system. The mucous membrane of the intestines is constantly bathed with a putrid sanies, subject to the laws of dead chemistry, in proportion as the individual is feeble and intemperate. The first is too much stimulated; but its stimulation only tends to exalt its vital action; the second is irritated by bodies which tend to produce in its tissue, actions unfavourable to life. It is not therefore astonishing, that it should become languid, and that after having been uselessly exhausted, it dies more from the effects of its own inflammation, than from that of the mucous membrane of the stomach. But there is a cause which preserves it from irritation during the suffering of the last mentioned portion, which is, that only a small quantity of putrefiable matter reaches it, in consequence of the difficulty with which the stomach allows food to pass. The mucous membrane of the colon only receives in these cases, phlogosis by propagation. When on the contrary, it suffers alone, the stomach surcharges it with the residue of aliments in a state of decomposition, which hastens its disorganization and

death: in like manner, we shall also see, that the following patient recovered, although he suffered from the stomach during nearly six months, because the intestinal irritation did not persist; whilst the primitive cases of diarrhœa of three months standing, have always resisted the various modes of treatment which I have tried.

CASE XXXVII.—*Dysentery and gastritis following intermittent fever.*—Mariage, twenty-six years of age, brown complexion, fleshy and regularly developed, presenting the characteristics of a bilious temperament, was attacked on the 6th of August, 1806, with quotidian intermittent fever, which I treated with cinchona in the usual forms.

The paroxysms abated, but a pain in the stomach supervened, with a tendency to vomiting, which obliged me to abandon the use of that medicine. I resorted to demulcent draughts, combined with laudanum, and to the spirituous water of balm, of canella, &c. But this formula was not immediately attended with any very great advantage. The accessions but slightly diminished: I again resorted to cinchona, pain and nausea again induced me to discontinue it; I directed an enema, I repeated the opium, the ether, and still obtained very little benefit. The diarrhœa which had taken place at the end of the first month increased my embarrassment. Finally, after much trouble, during a second month of treatment, I succeeded by the aid of solutions of gum, combined with laudanum to the extent of a drachm per day, and vegetable farinaceous regimen, in diminishing in a very great degree the accessions of fever and in curing the diarrhœa; when the patient thought proper, towards the sixty-second day, to drink from eight to ten pots* of pectoral ptisan during the night. He was not induced by thirst, but he hoped, that by taking in one day the quantity which should have been sufficient for ten, he would proportionably hasten his recovery.

In the morning I found him with violent fever, face red, pulse hard and frequent, harassed by constant nausea, and vomiting every thing that he swallowed. He informed me of the imprudent act which he had just committed, and I immediately put him upon the exclusive use of acidulated solutions of gum for drinks. In the

* Hospital pots of ptisan, which are equivalent to a bottle.

evening, and on the following day, there was no intermission, and very little remission. The vomiting, however, had abated, but nausea remained; and upon this indication some person gave him a dose of ipecacuanha, without my permission.

The next day the patient, after having vomited ten or twelve times, desired more ardently than ever an emetic. This false indication did not delude me. The most severe diet, lemonade containing a very small quantity of gum, or acidulated flaxseed tea and emollient fomentations to the epigastrium, were all that I thought appropriate to his condition. It was not until the sixth day after the occurrence, that, by the continuance of these agents, I succeeded in abating the febrile action, and in calming the nausea and vomiting. Gastric fever can be easily perceived in this case.*

From that period, 16th of October, until the 3d of November, the eighty-seventh day, calculating from the first invasion of intermittent fever, nothing new occurred, excepting that the patient still presented slight heat of skin and tenseness of pulse, whenever I increased his food to three-quarter's allowance. I was obliged to nourish him with soups, rice, gruel and plums, and other light food. He could only support meat in small quantities, and at long intervals. He, however, insensibly regained his strength. But, on the 3d of November, he had a return of febrile heat and frequency of pulse, corresponding to uneasiness of stomach.—Diminution of food, use of demulcents. On the 6th he was rather better.

On the 7th, rigor, followed by heat, in short, a perfect paroxysm of intermittent fever. I returned to the use of aromatized solutions of gum rendered anodyne with laudanum. On the next day, no chill, diminution of the proportion of stimulants in his juleps. On the 11th he had no fever; strength almost as great as before the relapse. But I very soon saw, that to preserve this favourable state, it was necessary not to increase his food beyond half allowance in the morning, and one-quarter in the evening, and to always select the lightest kind, proscribing the use of meat. Upon examining him very attentively, however, I observed that he retained fulness and tenseness of pulse.

* It was so, and if the phlegmasia had not been mitigated, there would have soon been seen *adynamic fever*.

On the 18th of November, one hundred and fifth day, complete paroxysm of fever. The redness of the lips and the general injection of the capillary vessels, struck me very forcibly. The paroxysms were repeated until the 24th of the month, the one hundred and eleventh day. They were at the end of this time dissipated by aromatized anodynes, which I directed to be alternated with acidulated mucilaginous solutions: for it was still necessary to guard against the irritability of the stomach.* Therefore the aliments were still vegetable, light and small in quantity. Constipation became habitual.

On the 1st of December, in conversing with Mariage, I learnt that he had always had slightly painful respiration. On comparing this idiosyncrasy with the injection of the lips and tenseness of pulse, I was induced to examine the region of the heart, in which I discovered very vigorous action. Therefore, in this individual there were united three elements of disease; 1st, a too energetic sanguineous system, from excessive action of the heart; 2d, extreme irritability of the internal membrane of the stomach; 3d, and an habitual intermittent fever, which constantly tended to reappear.

On the 14th of December, one hundred and thirty-second day, his stomach could support three-quarter's allowance in the morning, without uneasiness or febrile heat resulting; but on the 21st of the same month this regimen appeared to disagree with him, which was indicated by heat accompanied with chills, by anorexia and constriction in the epigastrium. It was necessary to return to light food, which very soon restored the harmony of the functions to their former state. No trace of intermittent fever reappeared, and on the 28th he was able to resume three-quarter's ration.

He left the hospital several days afterwards in good health, but still retaining that tenseness of pulse and that extraordinary action of the heart, which indicate either genuine aneurism or at least a predisposition to that affection. He had been ill nearly six months, and had passed nearly five and a half at the hospital.

Observations.—I have seen in several other instances, considerable irritations of the stomach arising from excesses com-

* At the present day, I would abstain from excitants, notwithstanding the paroxysms. I should not apply cinchona especially, except to the surface.

mitted with warm aqueous drinks. Many soldiers are in the habit of taking large quantities of ptisan in quick succession for gonorrhœa. I know not whether this method is certainly efficacious in arresting incipient blennorrhagic phlogosis; but I am convinced that it may determine gastric obstructions and inflammation of the stomach.* I have seen intermittent fever the immediate result. Doubtless the large quantity drank, only acted as a determining cause; but, perhaps, without its action, the organism might have triumphed over the impression of the febrile cause. It is evident that excesses in spirituous will irritate more than aqueous drinks; however, if the last are warm, they are to be dreaded in many temperaments.

It is therefore necessary to be very cautious when called upon to treat a gastric affection which succeeds any of these excesses. It is always prudent to attempt the cure with emollients, and not to resort to purgatives, except when regimen and these means have been fruitless, and when the necessity for evacuants is urgent. These cases resemble those which Frederick Hoffmann described in his dissertation *De Medicina Emetica et Purgante post iram veneno*. Even anger, perhaps, produces on the stomach a less marked disposition to phlogosis than black meats, vinous liquors, and hot and alcoholic drinks do.

Treatment of Latent Chronic Gastritis.

We should not have put physicians sufficiently on their guard respecting those cases of gastritis which expose them to error, if we confined ourselves to the general precepts which have been given upon this subject, and to the observations, the details of which have been just read. Frequently the gastric irritation is not, in its early stage, so intense as to excite in the system all the derangement upon which we have founded its diagnosis; and at first sight it does not appear different from that indisposition which the physicians who believe in the doctrine of humours designate by the name *mucous* or *bilious saburra*, and which Professor Pinel has classed under the denomination of *gastric obstructions*, (*embarras*.) By what symptoms may it be recognised in such cases? What are the principles by which a practitioner should direct his conduct?

* Gastric obstructions are the first grade of them.

A knowledge of the causes and nature of the epidemic, of the climate, &c. will furnish the first inferences, an examination of the progress of the disease will supply the remainder. Gastrites so mild as not to be recognised by any of the characteristics which I have mentioned in the general history, do not incur any serious injury from the administration of an emetic; it even produces a decided relief. It is true that it continues a short time, but the relapse is a valuable indication.* When afterwards fever arises, pain and anorexia increases, there can be no doubt respecting the necessity of demulcent drinks and a total abstinence from food; should it prove to be gastric fever, there will be no cause to regret this course of treatment, for they are the same diseases.†

During the summer of 1806, I received into the hospital of Udine, a great many cases of gastric affections. As I perceived that irritation was the predominating characteristic, I always commenced by giving emollients and acidulated drinks. The greater number recovered: whenever I found that it was to be expected, the daily amendment encouraged me to persevere.

In those cases in which the anorexia continued, accompanied with a bitter taste in the mouth, nausea, dryness of skin, belching and borborygmi, I gave emetics; if they only required vomiting, the appetite returned on the following day; if any foreign body, (saburra,) remained in the cavity of the intestines, the flatus expelled, the borborygmi, swelling of the abdomen, constipation, symptoms of worms, lassitude, and sympathetic pains in the loins and thighs, indicated the necessity of a purgative, which completed the restoration of the equilibrium.‡

Whenever there was a febrile action, I never felt the least uneasiness so long as it could be accounted for by symptoms of foreign bodies in the small intestines. But when these symptoms did not exist, or when after the necessary evacuations, I found

* Would it not be better not to expose the patient to this relapse? I now unhesitatingly remove gastric obstructions by the application of eight or ten leeches to the epigastrium.

† I had therefore laid down the basis for the cure of idiopathic fever.

‡ Observation has insensibly led me to the disuse of purgatives, whenever the sensibility of the primæ viæ is augmented, and I have been much more successful by this mode of practice, than by that which I had adopted when this work was written.

that the frequency and tenseness of pulse, with heat of skin, want of appetite and of strength, and suspension of the excretions continued, I cautiously avoided giving any thing but lemonade, pectoral ptisan, barley-water, or other similar drinks, and broth as the only nourishment.

All those in whom the febrile action was prolonged after the first gastric symptoms, necessarily went through the regular stages of *bilious fever*.^{*} During the hot weather of 1806-7, I saw a great number of fevers of this nature terminate in three, four, five, and six days, some after having been treated with purgatives, and others without their assistance, but always with the aid of acidulated demulcent drinks and diet. I never was obliged to resort to bitters or tonics; they had a tendency to establish a centre of chronic sensibility in the stomach, which finally led on to gastritis. This is what I have observed in relation to febrile gastric affections.

Those in whom it was not so, were at times as numerous, and are not less worthy of observation, because they are confounded not with *derangements*, (*embarras*,) or *gastric fevers*, but with asthenic dyspepsia, vulgarly known under the name of *weakness of stomach*.

During the hot weather of 1806 and 1807, a great number of patients remained for a long time, at the hospital of Udine, in the following condition: paleness, without the least yellowishness of complexion; some had even a fresh colour; and appetite to eat half a ration in the morning, if it was given to them, but only soup at night. Several could not digest soup; their morning meal was taken with pleasure, but at night they felt a sensation of fulness, as if they had eaten a great quantity, which induced them to discontinue after one or two mouthfuls. They did not complain of pain, but of an indescribable sensation of weakness. Several could not support themselves, and had tremulous limbs; they had habitual constipation, slow pulse, sometimes tense, and pretty strong.

Whenever an attempt was made to cure such diseases with bark, wine bitters, or any other similar stimulant, which could

^{*} I was beginning to perceive that it is not absolutely necessary for fevers to go through all the stages authors have attributed to them.

be thought of, an increase of pulse and febrile action, with burning heat of skin towards the evening, was observed, the uneasiness increased and symptoms of gastritis became evident.

I treated these diseases in the same manner as I recommended in chronic gastritis, and I dare flatter myself, that I saved a great many, who, by any other course, would have died in a state of hectic from pain.*

It is not only amongst Frenchmen that I have observed that sensibility of stomach which increases by the use of tonics; the inhabitants of Udine are frequently attacked with it. They sometimes fall into a consumptive state, with anorexia and vomiting, which often conducts them to the grave, because comforting medicines of every kind are rarely dispensed with. Dr. Trastour, surgeon-major of the eighty-fourth regiment of infantry, saw a tradesman of that town expire in the last stage of marasmus, induced by stomachics, which had been successively prescribed during several months, by the most distinguished physicians of the place. Not one of these suspected the true character of his disease, whilst M. Trastour, who had often studied with me at the hospital, and who had assisted at several of the examinations after death, recorded in this work, recognised it, and foretold its fatal termination, which he would have certainly prevented, had the patient placed confidence in him.

I saw, in the same town, a man attacked with quotidian fever, with gastric sensibility, who was equally reduced to marasmus by the use of cinchona, which he took under the direction of a Brunonian physician. When he consulted me, his stomach was extremely painful after drinking even the most demulcent fluids, but the unfortunate man could not eject them, notwithstanding the inclination he had to do so, and the efforts which he made to accomplish it; his fever was continued, accompanied with irregular and obscure chills. He abandoned all medicine, and lived upon light food, selecting such as agreed best with his stomach; he was relieved, and the cool weather completed his cure.

During the same summer, I cured by the use of lemonade or a decoction of barley, with panada and rice for food, a young girl, eighteen years of age, and a child of three, who were falling into

* I did not then know all the advantages of leeches in abridging the duration of these diseases.

consumption. A state of inappetency with constant nausea, and unconquerable melancholy during twenty days, had excited surprise. An emetic had only evacuated clear water; a purgative had produced no evacuation, but great anxiety. The parents thought of worms; some friends recommended bark, because the irregular chills which occurred in the evening, appeared to them a symptom of intermittent fever. I persuaded them with great difficulty to adhere to the regimen I recommended, and the patient's patience and perseverance were rewarded by a perfect recovery. The amendment was not decidedly marked, until after seven or eight days continuance of the means recommended.

Since then, I have often found good effects by prescribing the same regimen to individuals, having brown hair, and who were thin and irritable, whom I had vomited and purged, agreeable to the usual custom, in order to relieve them of an obstinate nausea, with bitter taste in the mouth and bilious complexion. This treatment restored their appetite, which they had despaired of regaining by the use of bitters and purgatives. This disease is most frequent during the summer. It attacks individuals of the temperament just mentioned and rarely ever those who are lymphatic, and whose tissue is relaxed and circulation languid in the capillary vessels of the surface. I have now met with it so repeatedly at Paris, that I believe it to be much more frequent than is generally supposed. How many individuals in France, who are supposed to labour under hypochondria or *obstruction*, whose only disease is an excess of gastric susceptibility, which is kept up by tonics, solvents and aperients, and which might be easily removed by regimen and demulcent medicines! As the climate is not as warm as that of Italy, the disease is kept up in a less marked degree. It sometimes cures itself by time, as some of our authors remark, in speaking of hypochondria and dyspepsia, because the sensibility diminishes; but this is supposing that the inflammation has not been sufficiently violent to disorganize the membrane or to destroy the individual by pain, which does not often fail taking place.

M. Bernard, a young surgeon in the army of whom I have already spoken, as industrious as he is anxious to acquire information, and who witnessed during a length of time my cases and my experience in this form of disease, wrote to me from Voiron, his native place, on the 5th of November, 1807, respecting his father,

who had died of a disease which had baffled all the physicians of that part of the country. "In my last letter I could not tell you that my father's body had been opened. Some adhesions of the pleura were found, the consequence of a former attack of pleurisy or peripneumony; the lungs were sound. The physicians informed me that the internal membrane of the stomach was in a state of suppuration; that the large intestines were more inflamed than the small; he died dropsical in the highest degree. He was tapped the day before his death. The most experienced physician of the neighbourhood pronounced his disease scirrhus of the pylorus. Consequently resolvents and deobstruents were not spared. Indeed, from the time of the first attack of gastritis until the time of his death, he constantly took cinchona in substance, extract and syrup, emetics, snake-root, musk, camphor, laudanum, ether, &c. &c. When hectic fever became severe, the accessions at night were mistaken for paroxysms of quotidian fever, and treated accordingly. In short, the last six months of his life were passed in continual pain, with vomiting or an inclination to do so, diarrhœa, &c. Those who informed me of the results of the autopsy assured me that this disease was frequently met with, and could seldom be cured when it became chronic."

How many unfortunate beings are actually in the same situation as M. Bernard's father, and who die as he did! It would be worth while to know how many cases of scirrhus of the pylorus, hypochondria, obstructions and nervous diseases originating in the organs of the abdomen, would remain, if it were possible to separate all the cases of chronic gastritis from the diseases now existing in Paris under these different qualifications.

M. Bernard presents an example of gastritis prolonged during several years. I have met with such in military hospitals. But none of the patients thus affected died, as would have been necessary, in order to place the fact beyond the possibility of doubt. The fact is, when the disease is susceptible of that state of chronicity, it is not very intense, and only disorganizes the membrane or impairs the functions very slowly, and then rather by the assistance of medicines than by any power of its own. Therefore, since I have known of the possibility of such a form of gastritis, I have carefully avoided the use of stomachics. By this course at the hospital of Udine, I saved two inveterate hypochondriacal patients from marasmus, who appeared on the verge of death the

moment they resumed the mode of life of the barracks. The most attentive study during two years of their disease, only pointed out to me a gastric sensibility, which caused their stomachs to be easily affected. I always found that stimulating alcoholic or astringent bitters, were injurious, and that hot, spicy, or too much animal food incommoded them. I relieved them considerably, and even cured them, by means of muco-saccharine, farinaceous regimen, and analogous drinks; and if they have been free from all moral affections, and able on their return to their quarters to continue the regimen which was of so much benefit to them whilst in my wards, I have no doubt but they perfectly recovered, or at least that they did not die, as was the case with several dyspeptic and hypochondriacal patients for whom I was consulted, when practising in a civil capacity at Paris, before having been able to study the disease on the dead body. I recollect however having cured at the same period with a solution of isinglass in a decoction of cinchona, under the form of jelly, two or three dyspeptic patients, whose disease had increased by the use of elixirs, medicated wines, stomachic powders, and other arcana destroyers, which charlatanism profusely distributes throughout the capital. I might have dispensed with aromatizing the gelatine and with combining it with bitters, but I was myself enveloped in prejudice. I did cure however, because I made use of a much less powerful excitant than those by whom the stomach had been so long harassed. Nature no doubt lent me her powerful aid.

This practice, therefore, might be imitated in certain cases of dyspepsia of long standing, upon which the action of the most powerful stimulants has been exhausted. It will suffice to submit the patient to a gelatinous, farinaceous, muco-saccharine regimen; to banish all fermented liquors, to prohibit all accustomed stomachics, in order to obtain the recovery of those patients in whom phlogosis has not disorganized the mucous membrane, or even the whole of the viscera, by developing the meshes interposed between these membranes, and rendering them lardaceous, tubercular, and finally scirrhus.

We have established that a removal to a warm climate was the principal remedy for phthisis: we can assert the contrary with regard to chronic gastritis. When the stomach continues to reject its accustomed food, when it resists all dilatation, (an im-

portant point, in order to distinguish this affection from scirrhus of the pylorus, which permits an accumulation of food,) in an individual with dark hair, irritable and robust, who has no dread of pectoral affections, a removal to a colder climate may be of as much advantage as a residence in a southern climate would be to those having light-coloured hair, thin, and an inactive sanguine system, who are in the first stage of pulmonary phthisis.

If the capriciousness of the stomach can be attributed to the muscular layer of the viscus, the treatment must be no longer the same: revulsives and antispasmodics seconded by exercise and dissipation; would undoubtedly be the principal resources; but this does not belong to my subject.

When we read in the *Treatise on Vapours*, by Dr. Pomme, that he has quieted a variety of nervous symptoms, with chicken or veal broth, emulsions and other similar drinks, do we not find the proof, that an organization whose functions are disturbed may be appeased by diminishing the irritability of the stomach? And what assurance have we, that most of the facts upon which he rests the authority of his practice, do not resemble the diseases which now occupy my attention?

Many other distinguished physicians have also experienced the necessity of sparing the sensibility of the stomach in chronic nervous diseases, which appeared to depend upon a vitiated state of the abdomen.

The celebrated Tissot remarks, that those who make use of *liqueurs* after their meals, in order to facilitate digestion, could not adopt a better plan if they wished to produce a contrary effect, and totally destroy the powers of digestion.

All physicians who have had the advantage of profiting by the lessons of Dr. Pinel, know that this learned practitioner never fails to recommend fruits, milk, and a mild regimen to hypochondriacal, melancholic, hysterical persons, and those supposed to labour under obstructions, &c. when, after having exhausted the most celebrated solvents, aperients, and stomachics, they apply to him for relief from their torments. I have seen several recover who, according to his advice, had discontinued the use of drugs, and lived upon panada, eggs, milk, and fruit. But it requires great authority to induce men of the world, especially those who have accustomed themselves to the use of liquors, to put up with food and drink which tastes to them insipid, and

which at first gives them a sensation of weakness, very different from the strengthening and enlivening effect spirituous liquors produce as soon as they are received into the stomach. A little perseverance is all that is necessary to make them find this regimen very agreeable, and a return of health will be the reward for the slight sacrifice they make to their appetite.

The advice I here give must not, however, be taken so literally as to make it necessary to retrench all stimulants in the treatment of those who are affected with chronic sensibility of the stomach, or in that degree of gastritis which only disturbs the functions at intervals. Relaxation always succeeds excessive excitement. It will therefore be useful to allow small quantities of wine or some mild aromatics combined with mucilages, as soon as sympathetic disturbance no longer appears, either in the circulation, in the sensations, or in the functions of the different organs. They should be given as soon as the patient complains only of debility, and when the burning, concinante, gravitating, or constringent, &c. pain has given place to a sensation of cold in the pit of the stomach, and which seems to increase the feebleness. They may be introduced with such food as is most palatable. If they are found to inconvenience, they should be discontinued, and again resumed in smaller quantities, unless the idiosyncrasy of the stomach positively rejects them, as may have been observed during the convalescence of M. P..., (Case 32.)

The course respecting stimulating food, should be the same as that in reference to medicines, when it is necessary to increase the nutritive qualities or the quantity of the materials of which the regimen is composed. If the first attempt does not succeed, the irritation should be appeased, and, without being discouraged, another should be repeated. This course must be persevered in, without hesitation, with the persuasion that if the disease is curable, there is no other means of accomplishing it.

Treatment of Phlogoses of the Mucous Membrane of the Primæ Viæ complicated with Intermittent Fevers.

Although physicians attached to the doctrine of Brown refuse to admit opposite indications in disease, it would be difficult not to perceive, in treating gastric phlogosis complicated with intermittent fever, that the medicines required by the last, favour the progress of the irritation seated in the mucous membrane of the

stomach, and that the method most likely to succeed in that affection, is absolutely powerless in regard to the periodical attacks of fever. The history of Mariage, (Case 37,) has already furnished the proof of this fact; in following it step by step, one feels greatly disconcerted by the troublesome return of the paroxysms of intermittent fever, the treatment of which counteracts the cure of the principal disease. As I could not in that history point out all the means which I resorted to in order to break up habitual febrile action complicated with chronic gastritis, I shall give an account of the method I pursued with the greatest success during the summers of 1806 and 1807, when this complication was most common.

Although an intermittent presented itself with symptoms of *gastric obstruction*, I did not resort to evacuants until I had blunted the susceptibility of the stomach by emollients and a diet of twenty-four or thirty-six hours duration. If after that lapse of time the symptoms of *saburra* continued, I gave an emetic, and even a purgative if it was necessary: but when emollients and acidulated drinks were sufficient to reduce the gastric symptoms, I congratulated myself, and did not think it necessary to vomit the patient because he had fever. Bleeding sometimes appeared to me indispensable, on account of the violence of the paroxysms, but this was very rarely the case.

The patient thus prepared, if there was neither vomiting nor sensibility in the epigastrium, I tried the effect of cinchona, although there still remained anorexia, foulness of mouth, and foul tongue.* Being persuaded that that medicine is the first of febrifuges, I thought it due to the patient to try its effects, that I might not have to reproach myself with any delay in the recovery. Sometimes it suppressed the accessions in two or three days, and restored the stomach to its functions, although I had at first entertained fears for that viscus, and the cure was complete. At other times the disappearance of the fever was followed by a gastric sensibility, with anorexia, nausea, slight fever at night, and redness of the lips. Then, instead of continuing the use of the febrifuge during several days, as is the custom, to prevent the relapse, I abandoned all tonics, and put the patient upon

* It is the redness and not the foulness of tongue, which forbids the use of bark.

acidulated mucilages; and as soon as I found that the irritation was allayed, I again gave bark, not however in substance, but in decoction, with gum, rendered anodyne, and made in the form of emulsion, or wine combined with the tincture of opium.

When the first essay I ventured to make with bark in intermittent fever was followed by a longer paroxysm and became of a continued type, I no longer trifled with the disease. That symptom is one of the most serious that can occur to impede the cure of these diseases. I was at first alarmed at the consequences which resulted from it; but having obtained information by post mortem examinations, which I have carefully communicated to the reader, I unhesitatingly renounced the use of all stimulants, and treated the disease as an acute gastritis. I have always succeeded with this method, whenever the disease was recent.

If cinchona prolonged the accessions, I renounced it in favour of laudanum. I have cured, by giving this medicine during the apyrexia, in a sufficient quantity to keep up a slight state of somnolency, several fevers which bark had almost rendered continued. If there resulted heat, I combated it with the emollient method, and if the paroxysms tended to return, I resorted to alteratives, demulcents, and febrifuge antispasmodics.

This method, the particulars of which I now give, was for a length of time the only one that I employed in cases of intermittent fevers liable to relapse, when the stomach could not support cinchona in substance. After being convinced of the fact I gave spoonful doses of gum tragacanth or gum arabic, combined with from ten to sixty drops of laudanum, to be taken in the course of the day. If the stomach retained it, I tried the mucilaginous decoction of bark, with laudanum, and wine and soothing potions, also rendered anodyne. At the least appearance of gastric irritation, I suspended their use and confined myself simply to acidulated mucilaginous drinks, to lemonade, or to gramineous decoctions; I then again resorted to the same means, or I combined them in the same vehicle.

Food should always be given in small quantities; the patients could only support three-quarters ration, and they seldom eat meat, without being exposed to colic, to diarrhoea, and to relapses of intermittent fever. Several continued under this treatment, more than three months upon less than half a ration of light

food, and always completely recovered. I only speak of those who have not had a relapse during the year, and I have taken care to assure myself of the fact.

By this method I have succeeded in curing a great many cases of fever, in which I had found cinchona injurious. Sometimes the cure was tedious, but at all events it did not injure the stomach; the appetite was good, strength increased instead of diminishing, and I never knew chronic gastritis to result. I made use of the same means for those patients who entered the hospital with a relapse, after having been several times cured by cinchona in other hospitals; I have also succeeded with them in persons who were anasarcaous and greatly debilitated.

As I met, however, with some cases, in which no stimulant whatever could be admitted, which was not uncommon when the use of bark had been obstinately persevered in, and the dose increased in proportion to the obstinacy of the fever, I endeavoured to discover some mode of treatment which did not affect the stomach. The susceptibility of the stomach interdicting the use of cinchona in enemata, I finally determined upon the use of it by friction according to the method called *iatraleptic*. I selected the alcoholic tincture of that bark. Since I have adopted that method, I have had less difficulty in curing all intermittents liable to a relapse, which the delicacy of the stomach prevented from being treated by the usual febrifuges.* Sometimes frictions alone were successful; at others I aided them with aromatized mucilaginous potions, rendered anodyne with laudanum alone, or alternated in the manner previously pointed out. I made use of from one to four ounces of the tincture of cinchona during the apyrexia. It was applied to the epigastrium,† the abdomen, the thorax, and the fleshy part of the arms and thighs.

I have frequently endeavoured to subdue febrile action complicated with a grade of gastritis, by rubefacients repeated during each apyrexia. Occasionally they were successful, but I found them very inferior to frictions with an alcoholic solution of cinchona.

It is by these means combined, varying more or less one from

* In such cases the endermic method, that is, the removal of the cuticle, and the application of the sulphate of quinine to the denuded derma will prove still more effectual.—TRANS.

† It is not always safe to use frictions to the epigastrium.

the other, that I have endeavoured to effect the cure of what is called the *remains of intermittent fever*, in unfortunate beings who are condemned to draw their last breath in an hospital, at the close of the season, when these diseases predominate.

I have only spoken of fevers rendered obstinate by the sensibility of the stomach; they are most numerous in southern countries. In those of the north, intermittent fevers owe their obstinacy rather to complications with pectoral phlegmasiæ, as we have remarked in treating of these diseases. It appears to me, however, that the treatment from which I derived so much success in Italy, would not be improper. The fever would even be more under controul, because the stomach might be stimulated more energetically. In other respects the anti-febrile and the anti-gastric remedies must be joined to those appropriated to pectoral irritation, and for this purpose I must refer to what I said on that occasion.

I have still one advice to give respecting the treatment of intermittent fevers. I wish to present it as prophylactic to gastritis, to which this section is particularly devoted.

One of the means of preventing the occurrence of obstinate intermittent fevers, is to give to each patient febrifuges adapted to his strength. As long as the same remedy and the same dose are given to all persons labouring under fever, after having prepared them by the same means, many failures in the cure will be the consequence. There are fevers whose duration may be anticipated from the first moment of their appearance. A great change in the colour very early in the disease, relaxation of the flesh, the duration of the chills, and the difficulty with which the hot stage develops itself, are symptoms of great debility or of very energetic action of the destructive cause which gave rise to the fever. The treatment of these diseases is attended with numerous difficulties.

If bark be given, it overpowers the stomach, and throws it into a kind of stupor, which is evinced by a sensation of weight and pain in the epigastrium, with increased anorexia. If the fever yielded, the evil would be soon remedied; but it most frequently continues the same, or it is prolonged, and the paroxysms appear to be united by the obscure heat which continues during the apyrexia. Other febrifuge tonics, such as bitter decoctions and medicinal wines act in the same manner; emetics and purgatives pro-

duce useless debility. All this class of medicines has a tendency to excite gastritis or enteritis.

If in order to preserve the patient from these diseases, mucilages are tried, the debility increases, the chills become of longer duration, and the uneasiness becomes constant.

It is therefore impossible to pursue any uniform treatment, even should the patient not present at first any complication. Such individuals must be consequently expunged from the list of those who are to be submitted to the common treatment, and although but recently affected, they must be considered in the same light as those who have been so for a length of time, and who reunite in themselves the elements of several diseases, such as irritations of the stomach, of the intestines, of the chest, debility, susceptibility, tendency to fever, infiltration, &c.; that is to say, they must be treated as cases of fever of old standing, and submitted, the moment they present themselves, to the method of which I have just given the details. It is the only means of preventing all these complications, which are the usual cause of the prolongation of fevers.

Of the treatment of enteritis, or phlogosis of the mucous membrane of the intestines.

That portion of the mucous membrane of the primæ viæ which lines the interior of the small intestines is but seldom affected.* When the irritation originates in the colon, it but seldom goes beyond the valve of the cœcum unless the phlogosis extends itself rapidly in certain strongly-marked predispositions; in which case it often reaches the stomach, as has been mentioned elsewhere; but such cases are in general fatal.† I here allude to phlogosis of the intestines only, unconnected with gastric irritation, which is indicated by diarrhœa. I shall point out the treatment of the acute state, as preventive of the chronic, which will necessarily occupy my attention hereafter.

If the mode of action by which dysenteries are produced is recollected, it will not be difficult to conceive the mode of cure. It

* This of course can only be applied to patients whom I have had under my own care.

† There is then a complication with what is called *idiopathic* fever. These cases are serious: but they may be cured if leeches and antiphlogistics can be applied at the commencement of the disease.

will suffice, 1st, to spare the phlogosed membrane the presence of foreign bodies which might increase its irritation: 2d, to bring it in contact with those which possess an opposite property.

1st. To guard the inflamed membrane from all bodies which might increase its irritation, is the great secret in the cure of recent dysenteries; most cases might be cured by abstinence alone, if seen from their very beginning, however violent might be the attack, because mucous membranes resist disorganization a length of time. In general, phlogosis of a mucous membrane seldom breaks out suddenly in an individual in full health, with so much violence as to necessarily terminate fatally, unless the organism had previously received the impression of a deleterious and very active cause. The most common is the miasm of the stagnant ponds which usually produces contagious typhus. The impression of this fatal virus becomes complicated with, and renders the cure of all phlegmasiæ more difficult, which develop themselves during its existence in the economy. Occasionally it imparts to them an alarming degree of intensity, and gangrene so quickly takes place, that there is scarcely time for the assistance of art. But this morbid combination is not the subject of my work.

With the exception of those cases, pure phlogoses of mucous membranes which attack an individual in full health, only become violent from the effect of a process in opposition to the nature of the evil. If there were any other exceptions, it would be in favour of the mucous membrane of the bronchiæ. It unfolds itself in a viscus so rich in sanguine capillary vessels, that phlogosis is more easily converted into violent inflammation than in any other portion of the mucous system; but this seldom takes place unless from a repetition of causes, for it is very rare to see a cold break forth with the violence of pneumonia. But the question at present is in relation to the treatment of phlogosis of the mucous membrane of the colon in its acute state. Now, whether it be more or less intense at its commencement, or simple, or complicated with any other phlegmasia, abstinence from stimulating drinks and from food which may leave in the intestines an excrementitious residuum, is equally indicated in the beginning of the disease. Notwithstanding the violence of the pain, and the sensations of weakness and of faintness which the patients experience during the intervals of excessive pain, this principle must not be departed from as long as the body has not become exhausted.

The time for giving tonics and food is when the tenesmus begins to diminish and the evacuations become more easy; the more severe the abstinence has been, the sooner will this pleasing change take place; consequently its period cannot be easily determined. In general, violent and continued pain is incompatible with life, and if attention is paid not to irritate an acute dysentery, the symptoms will begin to diminish after twenty-four or thirty-six hours; and in three or four days that state of ease will be obtained which permits of the restoration of strength. We shall point out the course to accomplish this end in following the progress of dysentery in its chronic state; suffice it to add, that the abstinence here recommended should extend to all nutritive substances. We shall soon point out what drinks may be permitted without danger.

In epidemic dysenteries, when this phlogosis is from the very first combined with typhus, endeavours must be made to reconcile the treatment of the two diseases. I do not wish to enter now upon the consideration of the development of the indications peculiar to contagious continued fevers; I believe them to be extremely varied; I shall content myself with some general remarks. When reaction is violent, the antiphlogistic course which we recommended in enteritis must be advantageous in both diseases, for it is always necessary to wait, previously to using tonics, until debility requires their employment. In a contrary case, that is to say, when loss of strength is evident from the beginning, (in that case pain is not very violent,) emetics and purgatives should be the first means made use of, in order to excite the muscular fibres of the gastric passages already in a state of stupor, to free themselves from the putrid matter proceeding either from food or from bilious, mucous excretions, &c. Without this precaution, these foreign bodies would remain too long upon the phlogosed membrane, and would hasten its disorganization or death. Immediately after emollients are to be given, but care should be taken to render them stimulating with syrups, tinctures, aromatic waters, &c. in proportion as the sensibility appears to be blunted.*

In every combination of dysentery, when it begins with vio-

* All this is advanced upon honor, and notwithstanding the doubt I entertained of the efficacy of these means, and which I previously expressed when I said that the best method for the treatment of typhus was not yet known.

lence in an individual already debilitated by some other disease, the physician should vary his conduct according to the degree and nature of the disease, and the remaining strength of the patient.

If the disease is acute and still recent, the same course should be pursued as in simple phlogosis of the colon.

If the individual having dysentery is attacked with a very advanced acute affection, or with a chronic disease, his strength should be ascertained previously to regulating his regimen. A catarrh of some duration, rheumatism, and convalescence from an acute fever, are circumstances which do not deprive us of the hope of saving the patients from disorganization of the colon; as they still have sufficient strength to dispense with meat, solid aliments, and broths, they may be limited, as soon as phlegmasia of the colon appears, to jellies and farinaceous vegetables alone for food. These substances do not leave much residuum in the large intestines, and do not impede resolution.

If dysentery attacks a debilitated individual with violence, or one consumed by active hectic fever, whether the primitive disease be curable or not, the degree of weakness must be ascertained: frequently it obliges us to combine broths with the farinaceous articles and jellies, and certain tonic medicines, which we shall immediately point out. Such are the principal rules to which I have thought proper to attach the different shades of the nutritive regimen of the acute state. Let us now pass on to the medicaments.

2d. Mucilaginous and farinaceous articles appear to be those best calculated to diminish irritation of the mucous membrane of the intestines. In the first degree, when drinks reach in a few moments from the stomach to the seat of pain, and when there is only violent tenesmus, without stercoral evacuations, mucilages are the only suitable substances;* rice water would be still too irritating, because it exacts slight digestive exertion. Weak solutions of insipid gums, such as tragacanth, mucilages of linseed, of psillium, of quince seed, diffused in distilled water, are the internal fomentations which are proper to apply to phlegmasia of the colon; and even these must be used with caution. Given

* This is the case for the application of leeches to the anus, which removes the disease almost miraculously.

in too great quantities, or too often repeated, they are injurious, by their bulk, as foreign bodies. We have already seen that pectoral ptisan produced gastritis. Demulcent drinks should therefore be given by the wine-glassful, and at as great intervals as the thirst will permit; and when this is very imperious they may be acidulated with the mildest vegetable acids, as we have recommended for acute gastritis.

This treatment must be persevered in as long as the evacuations are frequent and the tenesmus is violent. If to calm or to sustain the patient, wine, the tincture of opium, or any other alcoholic preparation is given to him, they will, by reaching the phlogosed mucous membrane without having been sufficiently changed or decomposed, prolong, at least, the irritation.

During the violence of the tenesmus, great benefit will be derived from emollient fomentations and cataplasms, applied over the whole extent of the abdomen, if these topicals can be so put on as that the patient will not derange them in the necessary motions to reach the close stool.

As to enemata of mucilage, of oil, of bran and tripe water, &c. I look upon them as foreign bodies, which by forcibly dilating and irritating the suffering membrane, are most frequently injurious. I believe them to be only useful at the commencement, when it is certain that the tenesmus and general spasm of the abdomen have retained the fecal matter. As this is a foreign body of more consequence than an injection, it will always be of advantage to excite its expulsion, at first by injections of oil, of honey, and mucilage; and, afterwards, if the violence of the constriction prevent their passage or their action, by manna or any other muco-saccharine purgative, given by the mouth. But to make use of the last, it will be necessary to wait until the tenesmus shall have somewhat abated, and the constriction of the intestines yielded. In other respects, these evacuant means are only indicated in proportion as the excrements are obstinately retained. They are but seldom required, as the first effect of dysenteric irritation is to free the intestines of the matter remaining in them. This being achieved by nature, it will be sufficient for art not to supply fresh excrements.

Sudden diarrhœa and dysentery, or those preceded by griping and colic, which occur *after great feasting*, do not require different treatment. The intestines do not fail to empty themselves;

it suffices to let them alone, and not to give food capable of furnishing a residuum, until the irritation of the colon shall have entirely subsided.

When dysentery appears to be the result of too long or *too violent a crisis*, or of a *metastasis* of an irritation previously seated in another tissue, internal medicines and regimen should be aided by warm baths, rubefacient and vesicating topicals and frictions. Exutories appear to have more effect upon the metastasis of ring worm than upon any other. Opium in all such cases is very useful; but all these means are comparatively powerless without the assistance of the regimen which we have recommended.

In the commencement of dysenteries in *individuals prostrated by hectic*, or any other debilitating apyrexia, emollient drinks are again indicated. It is by their influence that soothing effects are obtained, and that the colon may be disposed to resolution, if the patient's powers of system can still permit it to take place. But in other respects it is not necessary to be so strict. The patients having no longer as much strength to resist the enervating effects of pain, it would not be proper when the gripings are severe, to dispense with the use of the vinous tincture of laudanum, (liquid laudanum of Sydenham,) or the syrup of opium. As soon as the discharge from the bowels begins to abate, sweetened wine and etherized draughts animated with distilled waters, appear to be equally claimed by the state of weakness and the depressed spirits of the patient. The violence of the disease being passed, decoctions of farinaceous vegetables, and in preference to all others, that of rice, are of great service.

Such are the curative means which reflexion and experience have led me to adopt in the incipient stage of phlogosis of the mucous membrane of the colon. I have never known them to fail when the disease was primitive and recent, however violent it might be. Nevertheless, I have had a great number of cases. Two or three days of absolute diet, and five or six of mucilaginous and farinaceous regimen, have always sufficed to subdue the phlogosis. I afterwards led the patient on to more substantial food, but I did it slowly and cautiously; I was always prepared to return to gruel, rice and the farinaceous articles, as long as I

perceived that the colon could not bear the accumulation of fecal matter, and that the evacuations were fluid, fetid, and abundant.

When the patients were attentive to my advice, and did not increase their regimen too fast, I had the satisfaction of seeing a very formidable dysentery terminate in ten or twelve days, and the convalescent, in from fifteen to twenty, sustain the food usually taken in a state of health.

But if the disease had been of some standing before any remedies were opposed to it, or if tonics had been used from the beginning, which was more conformable to the taste of a soldier, the irritation did not entirely subside. It diminished, it is true, for no very violent pain can be continual, but it did not disappear. Perhaps it had a tendency to abate after a little while, whilst the anorexia prevented the patient from taking *stercorous* food; but as soon as the pain of the inflamed membrane was not sufficiently severe to keep up great inconvenience in the functions, and permitted the stomach to perform its own, the patient obeyed his appetite and the diarrhœa returned. After some time the colic and the tenesmus disappeared entirely, and the phlogosis was only indicated by fluid and frequent stools. The patient, still more encouraged, conceived it to be time to comfort himself, and nourishing food and wine were not spared. Again the diarrhœa would make fresh progress. Occasionally when the excrements were more abundant, more animalized, and more fetid, colic and tenesmus were observed to reappear. These symptoms soon ceased, because the temporary anorexia which accompanied them, had momentarily compelled the patient to abstemiousness, and because the evacuations removed the cause; but soon again, fresh errors and renewed suffering. At length a period occurred in which colic no longer returned to interrupt the unfortunate patient. He gradually became extenuated, and reached a state of marasmus or of dropsy, with the best appetite in the world, and which he did not fail to gratify, without any other morbid symptoms, except some fluid evacuations from the bowels. He died most frequently without pain, in the same manner as invalided old men; occasionally during a return of colic, of tenesmus, of fever, of bloody evacuation, to the great astonishment of all the spectators, who could not conceive why a diarrhœa with relaxation and debility, did not yield to tonics and the most energetic astringents, so constantly and so copiously administered.

Treatment of Chronic Enteritis.

Every diarrhœa which is prolonged beyond thirty days, may depend upon the disorganization of the internal membrane of the colon; but in most cases it continues only because it is kept up either by medicines or regimen. In any case it is chronic phlogosis, the treatment of which may be subjected to invariable rules. M. Pinel wishes chronic dysentery to be treated, 1st, by a demulcent regimen, composed of milk and farinaceous substances, and rendered more nourishing in proportion to returning health; 2d, by mild laxatives given from time to time; 3d, by astringent tonics, given at intervals, associated with sedatives; 4th, by dry air, moderate exercise, the use of generous wine, and tepid baths. These rules are very good; but the reason for each prescription and the various indications given in the work of the celebrated professor, are not sufficiently detailed, and the author leaves too much to the will of the practitioner. I have endeavoured to be more precise, and have laid down for myself a particular mode of practice, which I shall here give. Every physician can either adopt it, reject it, or modify it at pleasure, after having given it a fair trial.

1st. As soon as diarrhœa, or rather phlogosis of the mucous membrane of the colon, which produces it, appears to me to be kept up by the stimulus of foreign bodies, I reduce the patient to such food as I think the least susceptible of furnishing excrementitious matter; 2d, but aliments most capable of being converted into chyle, are only well digested and quickly absorbed, in proportion as they are admitted into the stomach in small quantities; if the contrary takes place, they pass on half digested and reach the diseased part, together with mucus and bile, in a state of fermentation. The aliments selected should therefore be given in quantities proportioned to the strength of the stomach; 3d, it may be of advantage to favour digestion by soliciting the action of the stomach with tonics; but these tonics should only act on that viscus; if their action extends beyond it, they augment the irritation of the diseased part, either sympathetically, or by hastening the passage of the imperfectly digested food, and by acting directly with this last upon the affected part. Consequently a choice and a proper quantity of tonics are still necessary.

Such are the three principles of treatment, into the development of which I am about to enter.

The *aliments* least likely to leave a residuum, are those which have no organized tissue. Notwithstanding all that the art of the cook can accomplish, in rendering organized tissues, of whatever nature they may be, digestible, it cannot suffice to make the fibres completely soluble to the digestive powers, and reducible into chyle; digestion only extracts the nutritive parts. The remainder left on the surface of the mucous membrane of the intestines and mixed with mucus and bile, which phlogosis renders abundant, undergoes a putrid decomposition which forms a very irritating stimulant to the inflamed membrane.

Animal residuum is the most injurious; but that of vegetables is also sufficiently so to cause them to be dispensed with as much as possible; therefore, all the stalks, leaves, and roots which are used for culinary purposes, should be banished from the regimen of those labouring under diarrhœa. The seeds alone are admissible, and even those should be selected. No leguminous seeds are proper, and from the genus *cerealia* I only know of rice and wheat which can be given with safety.*

Bread, such as is furnished in hospitals, although nourishing and agreeable, contains too much bran, and affords too much excrementitious matter. The whitest, most delicate, and best fermented is preferable to that which is not so white, although more palatable; but it should only be used in the form of panado and gruel, and passed through a sieve.

Whole rice is susceptible of being almost entirely reduced to a nutritive mucilage; it is also better digested, and leaves less stercoraceous matter than bread; but its flour well sifted, and that of the best wheat, are far preferable for the nourishment of those having diarrhœa.

With these two materials, various jellies and gruels, either with milk or with water, can be prepared, which will be perfectly adapted to the indication. In the military hospitals I made use of gruel made with wheat flour and cow's milk. Although all the bran had not been entirely extracted from the flour, I derived from it the most happy effects. To this aliment I owe al-

* From corn meal a gruel may be made, which is of great service.

most all the cures which I obtained of obstinate cases of diarrhœa; and I should have been still more successful, if the patients had not frequently frustrated my endeavours.

In private practice, a patient having diarrhœa, may be nourished with a great variety of substances that do not afford much excrementitious matter, which cannot be obtained for him by the regulations of military hospitals. Amongst the farinaceous articles, the gruels, and vermicelli, provided they are of the first quality, a grateful variety of nourishment may be found by combining them with milk, cream, eggs, or sugar, according to the taste and digestive powers of the sick.

Meat broths may be allowed whenever digestion is easily performed. Strong soups, (*consommés*,) will powerfully contribute to support the strength and relieve the stomach from the long continuance of vegetables. Their effect, must, however, be carefully watched; if they render the evacuations more frequent it is evident that they are not easily absorbed, in which case they should be withheld for some time.

Muco-saccharine fruits may be of service in diarrhœa. Tissot has known good effects from the use of grapes. The ripest and most tender fruits should be selected; they must be eaten in very small quantities, and are preferable when dressed, excepting grapes, which should be very ripe and sweet. The skin and seeds, which are indigestible, should be carefully rejected. But they can only be allowed as a condiment and adjuvant. The basis of the treatment is the most digestible and purest farinaceous aliment, milk, and eggs.

To determine the quantity of aliments, as much care is requisite as in selecting them. This must be regulated according to the facility with which they are digested, and by the effects which result from it in the inferior portion of the canal. But in general, from four to six ounces of thickened milk or of jelly may be given per day, during the incipient stage, and gradually increased to three or four times the quantity. They may be made more consistent and stronger, if good effects follow their use.

When the appetite requires more than this quantity, the diarrhœa has terminated, in individuals in whom it has not been very inveterate. Soups may then be allowed, and afterwards eggs, and tender and muco-saccharine vegetables, such as spin-

age, cauliflowers, &c. Should these occasion flatulency, they must be suspended.

Should there be a fluid and copious evacuation during the twenty-four hours, it will be indicative of a still existing irritation of the mucous membrane, which prevents the excrementitious matter from being retained sufficiently long to be deprived of fluidity, or furnishes a sufficient quantity of mucus to prevent its becoming consistent. Either case indicating a slight degree of phlogosis, care should be observed not to allow more solid food, and to return, should it be necessary, to the exclusive use of gruels, jellies, and broths.

In my opinion, the only *medicines* which may coöperate with regimen in the cure of chronic phlogosis of the mucous membrane of the colon, consist of a few stomachics and anodynes.

When the general erethism which existed at the commencement has quite subsided, but there is still some local pain, I direct potions of a solution of gum tragacanth, rendered slightly anodyne with Sydenham's tincture of opium; I do not at first exceed twelve drops, or I give half a grain of opium at night. When the patients are very nervous and pass bad nights, I increase the dose of laudanum to fifty or sixty drops, without its producing any inconvenience. I have seen the best effects follow; but these medicines are only useful, in proportion as the regimen is, in its utmost severity, kept within the prescribed limits. I afterwards suspend the use of the preparations of opium, and return to it occasionally, even when uninvited by pain. I believe that this method of administering opium is absolutely curative, provided the regimen is observed, and there is no complication with gastric irritation, for in that case the treatment of diarrhœa must be directed upon the same principles as that of chronic gastritis.

In the course of the day I direct as drink, in the first place, an acidulated solution of gum arabic, and a few days later, as soon as the sympathetic effects begin to be allayed, weak rice water, slightly edulcorated. If the thirst is still great, I slightly acidulate the rice water with lemon juice; but I never recommend large quantities to be drank in any phlogosis of the digestive passages.

When the diarrhœa is reduced to one or two evacuations without pain, every thing else going on well, I prescribe the white

decoction of the military code aromatized. I add red wine to the rice water, but still in small quantities.

The other tonics of which the patient may make use to favour the action of the stomach, are wine, a bitter decoction, such as cinchona, or else small doses of cinnamon water, of balm, &c. in a demulcent vehicle. Let us study their effect as well as that of the various substances recommended in dysentery.

Wine should only be given at meal time; little is required, but it must be good. At first it should be taken diluted with water, and afterwards pure, but in small quantities, as long as there appears any trace of general erethism.

Astringents frequently increase the phlogosis by arresting the diarrhœa. They never fail to act in this manner whenever they are given in sufficient doses to extend their effects to the colon. They possess this property in common with every tonic, and their action, to be useful to the disease, should be confined to the stomach, and to facilitating digestion in an imperceptible manner. Now to accomplish this, no medicines containing tannin should be used. I have frequently observed disagreeable effects from them upon the stomach. We will study their action with that of opium.

Wine, a weak infusion of cinchona or of canella, a few drachms of the syrup of these substances, or of that of orange peel, will suffice to solicit that viscus to the proper performance of its functions; and constant use must not be made even of these. If this error is committed, thirst, dryness of mouth, sore throat, and other symptoms appear, which indicate that the mucous membrane of the stomach is too actively stimulated. As digestion becomes impaired, the chyme, less perfectly digested, leaves a more abundant and irritating residuum, which must necessarily add to the phlogosis of the internal surface of the colon.

Cimarouba is not more efficacious than other bitters in the cure of diarrhœa. *Ipecacuanha*, as an emetic, can only be of use during the early stage, when the necessity of evacuating the stomach is fully established. But, if I may frankly express my opinion, I do not know of any antidysenteric virtue that it possesses.* The cases of diarrhœa which cease after its use,

* I have since learnt to fear it, and I abstain from its use and substitute leeches, farinaceous articles, and in short a small quantity of opium.

are those in which the phlogosis is mild and not yet fully established, and which are likely to yield as soon as the foreign bodies which produce them are removed. I have very frequently repeated these experiments. For a length of time I vomited with ipecacuanha as many patients labouring under diarrhœa, as I treated by emollients and regimen. I have frequently known ipecacuanha to act on the colon, and render the diarrhœa bloody and painful, instead of arresting it, whilst the farinaceous and demulcent treatment has never exhibited a doubtful result. With it I would have been answerable for my success in a case of simple incipient diarrhœa, however violent, and in two days slight attacks were considerably advanced towards a cure. With ipecacuanha, if I observed six cases diminish, (I have obtained still greater success by the other method,) the seventh was exasperated by it, and became decidedly phlogosed, which in the end it was necessary to treat with demulcents.

All these considerations finally induced me to banish emetics from the treatment of diarrhœa in Venetian Friouli. I no longer admit them, except in extraordinary cases; in such, for instance, as when there is a probability of worms in the stomach, when nausea and acid or alkaline eructations and bilious evacuations are obstinate and refuse to yield in two or three days to the diluent and emollient treatment;* when at the same time the complexion continues yellow, the mouth very bitter, and that it appears to me probable the bile is stagnant or superabundant in the stomach or in its proper viscus. Demulcent drinks might have sufficed in most of the cases to relieve the stomach and to restore the biliary ducts to their action; but it would have been tedious, especially in inactive and relaxed subjects; and I was sure by emetics to shorten the suffering of the patient. Their utility being therefore evident under such circumstances, I did not hesitate to resort to them as early as possible.

I prefer ipecacuanha, because its action is confined to the stomach, and deranges it less than tartrite of antimony, and not because I believe it to possess an astringent property.

The antiperistaltic effect of emetics does not appear to me to be in any way curative of the peristaltic action which produces

* In these cases leeches to the epigastrium are more useful and more certain than an emetic.

the expulsion of stercoraceous matter. The first cannot prevent the second when phlogosis of the mucous membrane is the cause, and if it suspends it when it only depends upon the presence of foreign bodies it is injurious; for diarrhœa solicited by irritating and fetid excrements ought not to cease until all the matter which has provoked it is expelled. If this matter were retained, it would necessarily produce a local irritation in the sac of the cœcum, or in the inferior portion of the colon, which would predispose the mucous membrane of those parts to phlogosis. It is therefore preferable that it should be promptly evacuated. It is not the action which expels it that should be attacked, it is its cause. It depends upon the irritation of the mucous membrane:* discontinue then to furnish that membrane with bodies capable of stimulating it, and the peristaltic convulsions will be seen to subside. And even if they still continued too powerful, after sufficient evacuations and profuse use of emollients, it would not be by ipecacuanha, either as an emetic or an astringent tonic, or by the tincture of rhubarb, that endeavours must be made to allay them; it should be by opium:† this succeeds almost miraculously, when it is administered with the precautions which we shall recommend. Emollient fomentations and baths scarcely tepid, would also be more suitable than the pretended specifics, so boasted of in the cure of this disease. But let us study the particular effects of opium, which appears as it were a specific in this disease.

Sydenham's tincture of opium, applied in the form of frictions to the pustules of the itch, at first inflames them, increases the itching, changes this sensation and transforms it into smarting, which soon diminishes. After this the pustules fade away and do not reappear. I have several times cured itch in this way, and I have occasionally failed. The pustules to which it was applied, always disappeared, but occasionally fresh ones during a length of time continued to appear.

I have used the same friction to boils when first appearing. I was careful to excoriate the skin in order to facilitate the absorption of the medicine. These small inflammatory tumours at first

* On this account I now prefer leeches applied to the anus, over the cœcum, and over the painful portion of the course of the colon.

† After leeches.

became more painful, afterwards fell into a remarkable state of torpor, and their further progress was arrested; their bright red colour changed to a livid red; they became indurated and their resolution was slow. But none of them continued to progress until the formation of a core, (*ventriculus furunculi*,) as was the case before the experiment.

I made a third trial of frictions with the vinous tincture of opium upon the red itching pimples, with which the skin is frequently covered during the summer in warm climates, and which have been designated by the name of *prickly heat*. The itching became at first insupportable; then it changed to a smarting sensation, and finally disappeared at the same time that the pustules assumed a livid colour and faded away. In all these experiments the portion of the skin rubbed with laudanum became dry, harsh, and without perspiration; the hands which applied the frictions were in the same state, and felt as if they had been handling walnut-shells, artichokes, or any other substance impregnated with tannin. From these experiments I have concluded that the tincture of Sydenham first actively excites the organic action of the parts it touches; 2d, that it immediately after benumbs the same capillary vessels which it had excited, whilst it condenses and contracts them. It is only by this last effect that it has any analogy to tannin; for that substance condenses and benumbs without having previously excited organic action and invited the fluids into the fasciculus it penetrates as the tincture of opium does.

The effects of the tincture of opium must be much greater upon the mucous membrane of the *primæ viæ* than they are upon the skin. Therefore, after having strongly excited the organic sensibility and contractility of the stomach, it produces in it a state of stupor of some duration, during which the secretion of mucous diminishes and the peristaltic oscillations are relaxed. It has therefore a soothing and an astringent effect. Now it is of this double mode of action that we must take advantage in order to combat beneficially phlogosis of the mucous membrane of the colon, and the convulsive contractions of the muscular layer of that intestine. The following are the precautions I think necessary in order to succeed.

1st. Never to give laudanum when there exists a general inflammatory diathesis, because it increases upon every excitement

however trifling it may be. Consequently the consecutive sedative effect would not take place; or if it did, it would be confined to the part more immediately affected by the opium; the excess of reaction might also transform this state of torpor into death, from which would result a gangrenous eschar, governed by the same laws as those which determine it in frost-bitten limbs when they are too suddenly warmed.

2d. Never to administer it by the mouth when the stomach is affected with gastritis, because there would be reason to fear, as in the preceding case, an increased local irritation, or a state of torpor tending to gangrene.

3d. To wait before using it until the spontaneous contractions of the alimentary canal, or those whose action is called forth by emetics and cathartics should have freed that organ from all stercoraceous matter and from the accumulated product of mucous and bilious secretions. In fact, the torpor caused by opium favours the retention of these substances, which becoming constantly more putrid and irritating, might very seriously affect the organization of the internal membrane of the cœcum and inferior portion of the colon; for it is in these portions of the alimentary canal that redness and ulceration are always the greatest, and in which collections of lumbrici are usually observed.*

4th. To direct it to be taken first in a demulcent vehicle when erethism is still considerable; to increase the dose very gradually until it produces sleep, and to modify its narcotic effect, if necessary, with vegetable acids.†

Opium, in general, introduced into a healthy stomach after sufficient evacuations, and when nervous irritability and sanguine reaction have been sufficiently allayed, appears to me to modify dysentery in the following manner.

The temporary excitement produced by its first impression is but slightly felt by the phlogosed colon: its action is principally upon the stomach; and it is not necessary that the activity

* If from the violence of the pain recourse must be had to opium while fecal evacuations still take place, a muco-saccharine purgative should be given as soon as its action has ceased.‡

† To give acids it is necessary to wait until the opium is no longer in the stomach; for according to Dr. Orfila, a mixture of narcotics with acids irritates and even inflames the mucous membrane of the stomach.

‡ Leeches to the anus is a much more certain method.

of the circulatory system should be sensibly increased. On the contrary, the stupor, always prolonged, which succeeds this stimulation, is shared by all the nervous ramifications and especially by those which are distributed to the papillæ and muscular fibres of the affected part. At the same time the astriction of the stomach is communicated to the capillary vessels of the phlogosed mucous membrane.

Consequently opium produces at the same time, 1st, diminution of the general susceptibility; 2d, diminution of local susceptibility and consequently of capillary circulation and of secretion of mucus in the phlogosed part. Every physiologist must now admit, that it only appertains to opium, or other medicines whose action is analogous, to produce so many combined advantages. In fact, bitter, acrid, and irritating stimulants evacuate the matter which distresses the irritated surface, but add to the phlogosis, which always renders their use injurious if this affection has the least tendency to prolong itself. Permanent tonics or astringents have indeed a tendency to contract the phlogosed fasciculi, to expel the fluid which engorges them, and to deaden the local susceptibility; but they only benumb the part they touch, so that the too energetic general reaction opposes their sedative action and renders it useless, or else it augments the organic action much more than they have diminished it; whence results an increase of irritation and sometimes the destruction of the portions most irritated.

To this will be replied, that astringents are only adviseable at the period of relaxation, and after the use of emollients. It cannot be denied that they occasionally succeed; but even then, opium in small doses will always be more beneficial, because it unites a general sedative effect to a local, and acts more efficaciously than any other substance upon the peristaltic action of the irritated intestine.

It is therefore, 1st, to farinaceous, lacteous, and muco-saccharine food; 2d, to mucilaginous drinks at first, and afterwards to decoctions of rice, oatmeal, bread, &c.; 3d, to wine in small quantities, in the apyrexia chronic state, and to a few mild tonics, given with the view to stimulate the stomach alone, and only when it is evident that it requires it; 4th, lastly to opium, that I confine the treatment of diarrhœa and chronic phlogosis of the mucous membrane of the colon.

I shall now describe the manner in which I directed their ap-

plication in the different periods and different degrees of chronic diarrhœa.

When the diarrhœa had continued but a short time beyond the term of the acute stage, as from twenty to thirty days, and the energies of the system were not exhausted, I gave, in addition to farinaceous articles and mucilages, only a dose of laudanum at night in a mucilaginous julep. I refrained from every other tonic, being persuaded that it is not so often necessary to urge the stomach to perform its functions properly, as many at the present day imagine it to be. Therefore a clammy state of the mouth and languor of digestion did not induce me to give wine or bitters so long as I saw the patient retain his strength and flesh and a good complexion. I confined myself to diminishing the quantity of food, and digestion went on extremely well. From that time tonics were discontinued, for I always dread them in phlogoses as long as there remains any strength in potentia.

If the disease exceeded by several weeks the period I have just pointed out, I endeavoured to ascertain the patient's strength. I at first tried the most severe method, and if there was no disorganization, I was in some measure successful. Occasionally the calm which followed was so perfect, that I ventured to give wine, the emulsionated decoction of cinchona, or aromatized juleps. If I observed the diarrhœa become violent, I withheld them and confined myself to laudanum; if the amendment continued, I only allowed wine at meals, because it is useless to persevere in stimulating the system when on the recovery, under the pretence that it has not yet returned to its natural degree of strength. I have always preferred waiting for the restorative effects of good food rather than of stomachics; and provided the digestion is good, I require nothing more. It was sometimes necessary to retrograde in the treatment of the most curable diarrhœa, as I have mentioned being obliged to do in that of chronic gastritis.

Lastly, when the disease was of more than two months standing, and attended with marasmus, change of features and complexion, fetor of the cutaneous and pulmonary excretions, predisposition to œdema or already advanced dropsy, I added to the regimen mentioned large doses of wine and decoction of cinchona and other tonics, if the stomach could bear them. However, I have never greatly multiplied them; aromatized mucilaginous potions and laudanum were frequently the only ones that

I employed, because the others seemed to do more harm than good, and these cases of diarrhœa sometimes terminate by an addition of gastritis in dry and irritable individuals.

I have never thought it prudent to directly attack dropsy, consecutive to dysentery, with diuretics, &c. A few doses of vin. scillæ, of an infusion of juniper berries, or of an aperitive apozem, were sufficient to convince me of the injurious effects of stimulants in this kind of disease: the more there is given of these, the greater the evacuations from the bowels, and the sooner the patients perish.

I have seen these experiments sufficiently near, without having performed them myself. Irritable and sanguine individuals sink into marasmus, and only present slight anasarca towards the close of life. There are some lymphatic and flabby persons affected with diarrhœa, in whom the phlogosis is apyrexia and but slightly painful, who die of dropsy. Now, there are many practitioners who cannot become convinced that so slight a diarrhœa can, in three or four months, terminate in dropsy. They fancy hydrothorax, if the patient has coughed, and if the ascites impedes his respiration; and obstructions, as soon as the abdomen appears to them renitent: there are even those who attribute diarrhœa to an obliteration of the lacteal vessels, or to an obstruction in those of the liver. In consequence of these various theories, one gives incisive pectorals, another deobstruent aperients, a third wishes to disengage the liver by hepatics, and a fourth, finding the diarrhœa insufficient because it is confined to two or three evacuations, and taking this moderate excretion for an effort of nature, thinks himself called upon to use drastics; in short, all agree to stimulate the kidneys in order to evacuate the serum. Since I have devoted myself to the healing art, I have witnessed all these modes of treatment, which are more or less stimulating, and I have always found them pernicious. Post mortem examinations alone enabled me to ascertain the truth.

Although I have attended a great many patients labouring under diarrhœa, I will not accumulate the observations in favour of the demulcent treatment. The cure of cases of acute dysentery would not teach any thing more than what I have already said in tracing the general plan of treatment.

I have asserted that, after from twenty to thirty days, a diarrhœa appeared to me to be kept up by the food or medicines, and that I then considered it as chronic. Now, I am in possession

of a great many recoveries, extending from that period to forty or fifty days. In consequence of which I firmly believe that I have saved the lives of a great number of patients, who would have been incurable if the good method had been delayed twenty or thirty days later; but it would be uselessly enlarging this work to report all these cases. My object in giving numerous cases of gastritis, was to throw some light upon its diagnosis, by exhibiting the disease under various forms; this motive does not influence me here; every person can recognise diarrhœa. It was necessary to prove that the evacuation depended upon phlogosis of the colon in an infinite number of delicate grades, which, according to general opinion, did not possess the characteristics of inflammation; this I have done in the pathological and anatomical part of this collection. In order now to prove the efficacy of the emollient and farinaceous treatment in these same grades of phlogosis of the colon, I shall content myself with giving a few of the most chronic cases; general conviction will follow, and the rest will be accomplished by the trial which each practitioner will be enabled to make of the method I propose.

The following case will demonstrate that inflammatory diarrhœa may be, if not produced, at least increased and kept up by those tonic medicines which are in general so freely given to those convalescing from fevers of a bad character; the utility of the demulcent treatment is evidently seen, and the advantage of administering tonics in doses sufficiently moderate to prevent their primitive action from extending beyond the stomach, may be likewise judged of.

CASE XXXVIII.—*Chronic diarrhœa following ataxic fever.*—Mayer, twenty-four years of age, chestnut-coloured hair, regularly formed, of medium height and stoutness, having been fifteen days at the hospital of Udine, labouring under itch, was suddenly seized with violent delirium, attended with fever. I found it to be ataxic fever, which I treated according to the generally adopted method, by stimulating drinks and repeated applications of blisters, sinapisms, &c. On the thirteenth day, Mayer was without fever, and might be considered convalescent.

I was endeavouring to favour the return of strength by the use of wine, cinchona, and light food, half vegetable half animal,

when he told me that he had a diarrhœa with tenesmus and bloody evacuations.* It was the spring of 1806, in the middle of April, which was precisely the time when the want of success of the astringent and tonic treatment obliged me to adopt the demulcent method.

Mayer took in the first instance, during nearly one month, aromatic solutions of gum arabic, the soothing astringent potions of the military formula, rice water with wine, theriac and diascordium. I directed as food, eggs, panado, gruel, and I endeavoured to assist their soothing effects by a few ounces of a mild sweet wine of the country, called *piccoli*.

Wearied with the inutility of these means, I reduced this patient as well as many others, to rice water, a solution of gum, mucilaginous potions rendered slightly anodyne with Sydenham's tincture of opium, and I confined his regimen to gruel solely.

The evacuation from the bowels became reduced in eight days from eight or nine discharges during the twenty-four hours, to two, and ceased to be bloody. Mayer was a length of time in regaining his strength; he would be two or three days without any evacuation, and as soon as I increased his aliment to a quarter ration, with a little meat, the discharges returned to the number of two or three. A return to soup, to gruel, and rice, could alone arrest the progress of these discouraging relapses. The attempt repeated at the same time with the patients labouring under the same disease, produced similar results.

At last, on the 14th of June, Mayer having been about a fortnight without any diarrhœa, and supporting well three-quarters ration, with meat and the usual allowance of wine, I considered him cured, and consented to his discharge. He had been four months at the hospital, that is to say, fifteen days for the itch, thirteen or fourteen for the ataxic fever, and three months in obtaining the radical cure of the consecutive dysentery.†

Observations.—The cure of a diarrhœa following continued fever of the asthenic kind, proves more in favour of the demulcent treatment than the cure of a primitive attack. This case will also obviate the necessity of giving many others. Let us support

* If this man had been treated with demulcents and leeches applied to the epigastrium and anus, the acute gastro-enteritis would not have become chronic.

† This cure, which had required three months time, might have been effected in five or six days at the utmost.

it by another, which presents more facts against the supposed relaxation and colliquation to which the diarrhœa consecutive to chronic diseases is attributed.

CASE XXXIX.—*Chronic diarrhœa following chronic catarrh.*—Petit, aged twenty-two, brown hair, medium height, slender, bilious, and irritable, entered the hospital of Udine towards the end of March, 1806, to be treated for a pectoral catarrh. He had first been attacked at Leoben, during the march of the army, and had imperfectly recovered. One month afterwards he entered the hospital of Bruck, in Styria, for the same complaint. In about the same length of time after he had left it, his cough, which had never left him, obliged him to enter the one at Gorizia, where he remained a very short time. At last, the progress of the constantly-renewed cough compelled him to seek relief at the hospital of Udine, in which he was received towards the end of the fifth month.

During the first month of his stay there he coughed excessively and fever never left him. It was sufficiently violent to lead to fears of approaching destruction of the parenchyma of the lungs.

He was treated according to the method pointed out by me for chronic catarrh which threatens to become tubercular. Several blisters in succession were applied upon the circumference of the chest. All this seemed to promise but little success; I was even alarmed at ephemeral appearances of diarrhœa which I observed from time to time.

At last, after twenty-four days of uncertainty, I observed a discharge from the ears, accompanied with deafness, and at the same time the cough ceased and the diarrhœa became constant.

This change in the direction of the disease did not seem to ameliorate the situation of the patient. His appetite disappeared, his strength failed, the pulse became small and hurried, skin dry and earthy, and emaciation progressed. Petit lost his spirits and hopes with his strength. Such was his condition on the 27th of April. I gave him rice water with wine and aromatic potions of gum. His food consisted of rice and soup in small quantities; I added to it sweetened wine.

The symptoms continued at first during four days, and in addition the abdomen became painful; but when I limited him to gruel as nourishment, and sweet *piccoli* wine, with two potions

of aromatic mucilaginous juleps, rendered slightly anodyne, as medicine, I found that the violence of the disease abated. Petit remained almost without fever, but his extreme emaciation and feebleness almost made me despair. I have never seen many patients recover after having been reduced to the same degree of marasmus as this patient was, but I determined upon nourishing him with only a few spoonfuls of thickened milk.

From the 3d to the 9th of May, the diarrhœa and fever gradually diminished; the former was reduced to two or three evacuations a day; appetite improved. I only increased the quantity of thickened milk.

On the 15th of May, Petit, although extremely emaciated, could leave his bed and walk a little in the corridors of the building. I continued the same regimen, but allowed him a double quantity of pap morning and evening. He was free from fever and almost from diarrhœa. The cough, which had several times threatened to return, had always yielded to a grain of opium, at night. He looked very well. I suppressed all remedies, but wine.

Until the 25th he had not gained much strength. At that period I remarked a little frequency of pulse and heat of skin, and rather more frequent evacuations from the bowels: I diminished the quantity of food, for he had already exceeded a quarter ration in the morning, and eaten occasionally a little meat. He soon recovered his former state by the use of lacteous and farinaceous regimen, and I continued to regulate his food in proportion to his strength.

On the 4th of June, he had regained some flesh, his feet swelled considerably during the day. He still had two or three discharges from the bowels in the course of the twenty-four hours; but they were not very fluid. This only indicated a trifling irritability of the colon. I endeavoured to subdue it with a decoction of oak bark, combined with a scruple of laudanum: this is what I call astringent potion. I directed to be taken at the same time one glass of wine bitters, combined with a drachm of the tincture of squills, in the morning fasting, with the intention of exciting the action of the kidneys. In other respects, a small quantity of meat and rice water with wine as a drink.

On the 15th of June, his strength and *embonpoint* having returned, his stomach supporting every kind of food without experiencing any inconvenience or return of diarrhœa, Petit left

the hospital in as good health as I could have wished, seven months and a half after the first attack of catarrh, and about three after that of the diarrhœa.

Observations.—If I have not obtained very frequent success in chronic diarrhœa existing in individuals as much debilitated as the one just mentioned, I attribute it in the first instance to the intemperance of the sick.* I have frequently known diarrhœa of two or three months standing promise a favourable issue; and when I afterwards sought the causes of an unfavourable change, I always obtained a confession of some clandestine repast, or else I was told that the patient had purchased some wine from his comrades, for a toast steeped in wine is held in high estimation amongst soldiers as a cure for diarrhœa. Several cases of this kind have already been seen to have terminated fatally.

I must also confess that I have lost some patients who had not deviated from my prescriptions, when the diarrhœa had existed more than three months previously to coming under my treatment. But as I was still less successful with other methods, I only became more devoted to my own. If it was not always successful in the cure of chronic diarrhœa, it at least furnished me with the certain means of anticipating it by its efficacy in the acute stage.

That malignancy of chronic inflammation of the mucous membrane of the colon which I have observed at Friouli is assuredly not universal. Tonics and purgatives succeeded better with our soldiers whilst in Holland, than afterwards in Italy, even at the period of the first arrival of the troops, and when they were greatly fatigued with a march of four hundred leagues, accompanied by many privations. No sooner had they breathed the air of Friouli than the gastric organs evinced an aversion for tonics and purgatives, although the soldiers were evidently much more feeble than they were before the army quitted its peaceful garrison at Batavia. It cannot therefore be doubted that phlogosis is much less rapid in a cold damp region than in one which is hot and dry, and that consequently dysentery is curable at a much later period in Holland than I have remarked it at the hospital of Udine. This fact alone suggests a great modification in the treatment; for if phlogosis can exist during a length of time

* I might also attribute it to the stimulants which I combined with the demulcents, in conformity with the precepts of my teachers.

in an obscure degree without producing disorganization, the person who experiences it must be less irritable; hence in an advanced stage of the disease, when the evacuations have greatly debilitated him, he should be more strongly stimulated, that the strength which is still in reserve, *in potentia*, may be determined to the stomach in order to perform digestion properly.* But it is still necessary that the stimulating action which is produced on that viscus by medicines and by aliments, should not be of a nature to occasion pain or to hasten the passage of alimentary substances before they are sufficiently assimilated to be easily absorbed. These materials must be small in quantity, and rather under than above the strength of the stomach. Without these precautions, phlogosis of the mucous membrane of the colon will be as much excited in a polar as in a tropical region, even to the entire annihilation of the powers of life.

The differences in individual constitutions is not simply limited to varying the form of diarrhœa, to rendering it febrile or apyrexial, painful or without pain, or to determining occasionally marasmus, or dropsy, as we pointed out in reporting the particular cases. It may also influence the duration of the disease and accelerate or retard the period at which it becomes incurable. These differences were not very apparent at the hospital of Udine, notwithstanding the diversity of *innate* temperaments, doubtless from the tendency of the same causes to render all the soldiers of a certain *accidental* temperament,† favourable to the progress of phlegmasia of the colon. But amongst the officers and those attached to the staff, I have known diarrhœa curable after three or four months duration. It is true that they seldom experienced it as violently as the common soldier, but they as often either neglected it, when it was not very profuse or painful, or treated it improperly. After having existed several months in that state without yielding to astringent tonics, I have cured it in five or six days, by farinaceous food given in small quantities,

* I now draw a different inference; for if the inflammatory susceptibility is inconsiderable, there should result, the disease being still of the same nature, a more speedy success with the use of demulcents.

† I have already explained the meaning of accidental temperament, which I consider to be a combination of debility and susceptibility, the one arising from a want of sufficient nutrition, the other from the stimulus exercised by atmospheric heat on a constant febrile state, &c.

and by anodyne juleps. These cures were the more readily accomplished, as the patients were less extenuated, and better able to support suddenly a rather severe diet.

When worms were complicated with diarrhœa, the cure became more difficult. The best vermifuges we possess in military hospitals are calomel, helminthocorton, aloes and rhubarb. Of these materials I formed pills, which I gave in different doses. I soon perceived that I could not long continue their use, as they increased the principal disease. Under such circumstances, I preceded their use for several days by potions made of the oil of almonds or of olives and the syrup of lemons; after which I gave a bolus composed of six or eight grains of calomel, ten or twelve of helminthocorton or of rhubarb, and two of aloes, and on the following day a purgative of rhubarb and manna. These medicines, repeated from time to time when the symptoms were renewed, and always after having allayed by mucilaginous preparations the irritation which they produced, were in most instances sufficient, because the worms in these cases of diarrhœa were in general not very numerous. When they were in great numbers, all my efforts were useless, because the powerful vermifuges which were required could not be sustained. But I have seen but few patients having diarrhœa in whom the danger was dependant upon the presence of worms; and when that was the case, they occasioned so much disturbance in the intestines that death was inevitable. Therefore, in most of the cases of dysentery which I have treated, worms were only an accidental occurrence which required a particular treatment when they became too numerous, a circumstance which seldom occurred. Moreover I have cured many individuals labouring under diarrhœa who had several times discharged worms without deviating from the course which I have pointed out.

Such are the observations I have hitherto been able to make upon the nature and treatment of phlogosis of the mucous membrane of the organs of digestion. The treatment with which I have obtained the most success, is grounded upon the use of mucilaginous and acidulated medicines. Tonics are only of secondary consideration—not as curatives, but as adjuvants during convalescence.

This doctrine is not contradictory to the known and attested

facts of correct observers. Every one may become convinced of it by reflexion. It may indeed happen in an epidemic phlogosis of mucous membranes, developed in a cold, damp climate, in a city in which poverty and famine reign, that the susceptibility of the stomach can accommodate itself to a more powerful dose of stimulants than I found to be practicable at Udine.

Although I know from experience that atmospheric heat predisposes the mucous membrane of the stomach to become phlogosed by the use of tonic regimen, it does not follow that spices are not employed with success as auxiliaries to digestion, by acclimated colonists and the natives of equatorial countries. The natives of the north have to apprehend an arrival into warm climates; it is then that they should have recourse to demulcents and to acidulated sedatives, until they are also reduced to the state of relaxation and insensibility necessary to support the over-exciting influence of the climate. But they must be cautious not to mistake the languor and debility they experience on first arriving, for the state just mentioned; such an error would cost them their lives.

Never having resided in latitudes approaching the equator, I cannot determine how long a time is necessary for an European to acquire that degree of languor which constitutes the acclimated state; but I am persuaded that it requires several months. I am very certain, however, that the demulcent regimen cannot produce bad effects, because debility never reaches too great an extent so long as the means of remedying it are not wanting. A feeling beyond our controul induces us to have recourse to corroborants as soon as the vital powers begin to fail, and such is the prevailing opinion of the day, that they will always be resorted to, rather too soon than too late. I would therefore desire, that to the other hygienic precautions which are recommended to soldiers on their arrival into hot countries, should be added that of never drinking fermented liquors, unless very much diluted with water, to make moderate use of lemonade, and to live, as much as possible, upon substances taken from the vegetable kingdom.

In vain will be the reply that the soldier requires tonics to enable him to resist the influence of a marshy and fetid soil, which threatens him with intermittent, with yellow fever, &c.; they are prejudices and opinions founded in error and pernicious in their consequences. Those who made the freest use of spirituous li-

quors during the contagious diseases under my observations, were its first victims. And it is not to be wondered at:—that a person who keeps himself in a constant state of fever, is a hundred times more susceptible to the impression of deleterious miasmata, than the one who continues in his natural state. If the excesses he commits establish a focus of latent phlegmasia in the alimentary canal, he becomes still more susceptible; and if he is then attacked by contagion, disorganization will be speedy in the weakened part, and will extend over the whole system. I am convinced that the use of stimulants as a preventive to epidemics produces an effect directly contrary to the one expected. The best protection against epidemics, either in hot climates, or in cold and damp marshes, is to maintain the system in a moderate degree of action, and in such a state as not to feel either weaker or stronger than that peculiar to the constitution of the individual, to have no fears, and to avoid excesses.

Is it not a general remark, that robust and sanguine persons are those most liable to be attacked by yellow fever? Are not disorganizations, sphacelations, and astonishing decompositions found in the principal viscera, and especially in those of digestion, upon opening the bodies of the victims to that disease? Has it not been observed that almost all who died of it had most violent fever from the very moment they were attacked, and that those in whom it was more moderate in the commencement, there was much more reason to hope for a favourable issue?

Do not all these facts prove an extremely strong and precipitate action in the nervous and sanguine systems, which quickly destroy the instruments of life? Now, I would ask, how are these impetuous actions to be designated, if not by inflammation? Is not the violence of that inflammation the result of the activity of excitants and of the excess of susceptibility? Does not the speedy disorganization of the tissues in which it declares itself,

* After having long discussed the nature of yellow fever, the conclusions given in this passage have been at last arrived at, since the most judicious physicians now confess that yellow fever is only gastro-enteritis occasioned by miasmata exhaled from putrid foci or from animal matter in a state of decomposition, and that the phlogosing influence of that gas is favoured by the irritability which atmospheric heat establishes in the mucous membrane of the organs of digestion. It is also admitted that this phlegmasia is only contagious in the neighbourhood of these foci.

announce that they were prepared for it by excitants, as we have proved in the etiology, when speaking of the effects of heat? Is it therefore difficult to conceive, that an abuse of stimulants predisposes Europeans, recently arrived in the West Indies, or in any other place of analogous temperature, not only to yellow fever, but to all the diseases which these dangerous climates can foster?

The climate of Italy, although not as warm as those situated between the tropics, is notwithstanding sufficiently so to occasion considerable excitement in those not accustomed to it. But it only throws into the state of *collapse* of which we have spoken, Frenchmen of feeble constitutions. The very hot weather does not continue long; four months of pretty severe heat are succeeded by eight months of mild weather, sometimes even rather cold, so that the inhabitants are strong and well made. However, even this is a very troublesome stimulant to Frenchmen who are sanguine and irritable, if coming from a northern department, because the winter is not long enough for repose.

If then the feeble are exhausted by it the same as they would be in the West Indies, and if the strong are more stimulated than they can bear, but not sufficiently so to be thrown into a state of *collapse*,* each constitution finds in it the cause of disease. Therefore, whilst waiting for each to get accustomed to the quantity of excitation constantly acting upon them, it is prudent for them to avoid the stimulus of exciting aliments and medicines, especially in the early stage of their diseases. They are not threatened with so speedy and so general a dissolution as if they were in a warmer climate; but they have always cause to fear a centre of disorganization, which would as infallibly lead to death; and experience proves that this focus is most frequently seated in the mucous membrane of the digestive canal, especially towards its inferior extremity.

Nothing can, therefore, be more injurious to Frenchmen, living in Italy, than the abuse of depletory and tonic medicines, that is to say, than those physicians who only see humours to evacu-

* The strong are much more predisposed than the feeble to gastro-enteritis, produced by hot climates. It is a fact well known to the inhabitants of equatorial climates, and acclimating consists in losing that predisposition to inflammation.

ate, or who only aim to overcome *incitation*. I will not say that the treatment should be rather passive than active, for it is of great moment to preserve a patient from many of those agents which could not fail to destroy him; but I will maintain that the physician who refreshes his patients by making them abstain a little from food, will be much more successful than the one who thinks it necessary to direct an emetic, a purgative and tonics to all who may happen to fall under his care; a prudent medium will always be the best course to adopt; but if called upon to choose, I should quickly decide, so much have I been struck with the few deaths that occurred when the treatment consisted almost entirely in a vegetable and aqueous regimen?

The principle has been attempted to be established, that chronic diseases were more rare in warm than in cold countries. It is evident that this requires to be modified. In equatorial climates, phlogosis may be so violent as not to permit the patients to linger;* but I can affirm that in Italy, with the exception of the cases arising from epidemics, the far greater number of deaths, is the effect of the obscure phlogoses which occupy my attention in this volume. Perhaps if these diseases could be readily anticipated, the assertion would have some foundation to rest upon; for, when the gastric organs are in good condition in hot climates, the other functions usually go on very well, with the exception of occasional affections of the chest.

I must now recapitulate the contents of this section, in order to condense the description of inflammatory affections of the mucous membrane of the digestive canal.

SUMMARY OF THE HISTORY OF PHLEGMASIÆ OF THE MUCOUS MEMBRANE OF THE ORGANS OF DIGESTION.

1st. *Causes.*

A hot, dry, or damp air, and loaded with irritating and deleterious particles, *ingesta* of a stimulating quality, melancholy

* If unacclimated individuals escape acute phlegmasiæ, they are nevertheless exposed to those that are chronic, which are always seated in the digestive canal. There are even many persons in whom tropical heat produces chronic gastro-enteritis without ever having developed acute. This is particularly observed in dry districts; for damp low lands, constantly loaded with putrid emanations, are those which most frequently engender acute gastro-enteritis.

and depressing feelings of the mind, or transports of passion; certain febrile predispositions, kept up by some permanent centre of irritation, incline the internal membrane of the organs of digestion to experience the phenomena of inflammation; and whichever of these causes act more immediately upon it determine the development of that affection.

2d. *Development.*

It is only in its highest degree that inflammation is sufficiently intense to occasion local pain, and to keep up constant febrile reaction; there are many other degrees in which it only manifests itself by derangement of the function of digestion, and sympathetic lesion of the principal structures. The concurrence of these two conditions is necessary in order to recognise it.

1st. The derangements of the function of digestion are reduced: (A) *Those of the stomach*, to vomiting, tedious digestion with sensation of weight, compression and heat; thirst, heat in the fauces, eructations, constipation. These symptoms are in proportion to the quantity and irritating property of aliments, and are allayed or dissipated by diet and aqueous and acidulated drinks: when pain also exists it is most generally pungent and lancinating; and is felt in the vicinity of the mammæ, below the hypochondriæ, or in the back. (B) *Those of the intestines*; the derangements in digestion are colics or pain with distention, occasional griping preceding the discharge of excrements, tenesmus and frequency of stools, of whatever nature. This last modification, *frequency of stools*, as soon as it becomes permanent, is sufficient to characterize phlogosis.

2d. The sympathetic derangements are: (A) *Those of the cerebral structure*, delirium, convulsions, trembling, gradual loss of the functions of the senses, and coma. (B) *Those of respiration*, cough, generally in short paroxysms, in direct proportion with the pain proceeding from the organs of digestion, dyspnœa, an expectoration which may resemble that of catarrh or pneumonia, aphonia. (C) *Those of the circulation and of the motion of the fluids in general in the highest degree*, violent fever, with ardent heat, very high colour, fresh complexion,* *in a less degree*, tenseness or a frequency of pulse,

* If the small intestines, and especially the duodenum, are phlogosed, there is a yellow complexion and a superabundance of bilious secretion, even without hepatitis; such is yellow fever in the acute state, and jaundice in the chronic.

which only reaches the intensity of fever during the evening exacerbations, but which may then by the coöperation of nervous derangements simulate ataxic intermittent fevers; *in more obscure degrees*, contraction, depression, slowness of pulse, with obstinate coldness of skin. These last symptoms often coëxist with delirium and severe lesions of the functions of the senses, and of muscular strength. Suppression of cutaneous excretion, fetidness of the exhalations, absence of lymphatic absorption, or dropsy, also belong to lesions in the motions of the fluids, and in most instances depend more upon prolonged phlogosis of the colon than upon that of the stomach.

3d. *Progress and Termination.*

Phlogosis of the mucous membrane of the organs of digestion, once established, does not disappear so long as the causes which produced it continues; but when it is not speedily fatal, its symptoms insensibly subside; it passes on to the chronic state, and becomes obscure in proportion as the life of the patient approaches an end. When it kills in the early stage, it is either by pain or sphacelation; when it is not fatal until in its highest degree of chronicity, death is produced equally as much by disorganization of the phlogosed part, as by general exhaustion of the powers of the system.

When this phlogosis is properly treated, it does not continue any length of time; but it requires a long while for the surface which has been inflamed, to become enabled to bear the stimulants to which it was accustomed previously to being diseased.

4th. *Organic Alterations.*

Are, 1st, *those of the acute stage*, florid redness* of the mucous membrane, with thickening, induration, and erosion; blackness, and even sphacelation. The more or less consistent exudations which are to be met with in this degree, seldom take place until the membrane is red; when it is black it is always found dry; 2d, *those of the chronic stage*, are independent of the appearances just mentioned, a more considerable development, ulcerations with unequal, and as it were callous edges, destroy-

* It becomes of a deep red previously to becoming black.

ing the entire thickness of the membrane; tubercular granules, some of which are black, fungosities of various sizes, with occasional ulcerations of a cancerous appearance, considerable thickening of the viscus arising from the tubercular or lardaceous degeneration of the cellular layers interposed between the membranes; thickening in which cancer does not fail to develop itself, if this degeneration is not anticipated by death.*

5th. *Curative Method.*

The treatment of this phlogosis depends, 1st, upon complete abstinence, in the beginning, from food; 2d, upon the use of vegetable substances, which in addition to being very nutritive, possess the quality of leaving very little residuum upon the irritated surface; 3d, upon the use of aqueous, mucilaginous, acidulated drinks, until the diminution of pain and sympathetic derangements permit the use of opium in enteritis alone, at first in very small doses, and afterwards strengthening medicines, which must be given gradually, and with the greatest precaution, especially in gastritis; 4th, external, cooling, relaxing topicals are more useful than rubefacients or irritants in the acute stage; 5th, exutories are proper in chronic cases, and especially when temperament or circumstances occasion fears that the irritation of the mucous membrane may produce scirrhus.

6th. *Complications.*

Phlogoses of the mucous membrane of the organs of digestion become complicated with every variety of disease. If the complicating diseases are inflammatory, they do not at all change the treatment. If they are adynamic, they often render purgatives necessary, and the mild tonics recommended during the convalescence of the phlogosis in question, are more speedily admissible in the course of the disease.† These are all the changes which they

* It occurs only in constitutions predisposed to lymphatic affections or sub-inflammations; but it is always in consequence of inflammation of the mucous membrane.

† It will be observed that I here incline more towards the demulcent treatment during the acute stage of supposed *adynamic fevers*, since I reserve tonics for the convalescent state. But how hard it is to shake off the yoke of classical authorities!

produce upon the curative method, for it is impossible to treat properly any disease whatever by medicines which are capable of injuring the membrane upon which they are deposited.*

The preventive treatment does not differ from the curative.

ADDITIONAL CHAPTER.

SECTION FIRST.

On Inflammations of the Liver, (January, 1822.)

PHLEGMONOUS inflammations of the liver are rare diseases, notwithstanding the opinions which have long prevailed in the schools. In our climate they generally succeed traumatic inflammations of the brain and of its membranes. In Vol. I. p. 481, I have given an example of this coincidence, but I was unable to ascertain whether the individual who was the subject of it had received any contusion upon the head; no wound of the scalp, however, could be discovered.

It is known that there are various opinions respecting suppurations of the liver which accompany those of the brain. The most celebrated of our day is that which attributes purulent hepatitis to a shock received by the liver at the same time as the brain. But facts having pointed out that wounds of the cranium inflicted by a sword, a stone, or a musket-shot, upon individuals who are either sitting or lying down, and who consequently had suffered no fall, had been followed by purulent hepatitis, the explanation which it unfolded became reduced to a mere supposition. Sabatier thought that the slackened circulation of the blood in the vena portæ, occasioned, in his opinion, by the engorgement of the brain and the forced stagnation of that fluid in the liver, might account for the phenomenon. But the very frequent occurrence of stagnation of blood in the liver, in consequence of aneurism of the heart or of peripneumony, demonstrated that this cause had no influence in the production of hepatitis; for

* This idea alone should have conducted practitioners to the therapeutics of supposed *idiopathic fevers*.

although the biliary organ in these cases is found excessively tumefied, no traces of inflammation can be observed, as I have constantly witnessed during upwards of eighteen years.

There is then no other way of explaining these abscesses than to attribute them to the sympathetic influence of cerebral inflammation. I am aware that it may be asked why non-traumatic cephalitis presents so few examples of it. Without endeavouring to account for this difference, I shall remark, that the organs contained in the cavity of the cranium cannot experience the phenomenon of inflammation without its being shared in some degree by the mucous membrane of the digestive canal. Now as the liver is one of the appendages of that canal, and from which the latter ordinarily receives its irritation, it does not appear to me surprising that gastro-enteritis should occasionally be extended to that organ with sufficient energy to produce inflammation; I therefore express this fact in the following manner; *encephalitis always produces gastro-enteritis, and occasionally hepatitis.*

But gastro-enteritis consecutive to encephalitis is far from being the only one which can produce this result; primitively it produces the same effect, as has been remarked by all attentive observers; whenever the mucous membrane of the stomach and duodenum is inflamed, the liver becomes engorged, and that engorgement which excites an increased bilious secretion, occasionally developes phlegmasia very different from that which arises from an obstacle to the course of the blood, which confines itself to a kind of venous tumefaction or a varicosed state of that viscus without the least sign of inflammation. As irritations of the liver produced by primitive gastro-enteritis do not always reach the degree of hepatitis, what has just been expressed in relation to cerebral phlegmasiæ may be very properly applied to it: *primitive gastro-enteritis always produces irritation of the liver and sometimes genuine hepatitis.*

In fact by reading different authors we shall soon be convinced that the causes to which they attribute hepatitis are precisely those which produce inflammation of the mucous membrane of the digestive organs. Atmospheric heat is beyond all contradiction the most powerful cause; now its most common effect is gastro-enteritis, as is proved by the cases of yellow fever, so famed at the present day. A fever, which previously to the examination of so many dead bodies, was supposed to be always ac-

accompanied with hepatitis, does not perhaps present in a hundred cases one true inflammation of the liver in which the secretion of bile has been carried to its greatest degree of activity.

It is generally by pain in the right hypochondrium, by the tumefaction and resistance of that region, by the yellow colour of the skin, by the deep colour and lateritious sediment of the urine, by bitterness of taste, mucus, and yellow aspect of the tongue, which is in general red at the point and edges, by the vomiting of bile, and pain communicated to the right shoulder, accompanied by violent fever, that physicians judge of acute hepatitis. The predominance of inflammation in the region of the pylorus and in the duodenum, suffice to develop the same train of symptoms. There can be no doubt that in these cases the liver is irritated to a degree which merits the name of *inflammation*; but it is seldom of that kind which produces abscesses; most generally it yields with the phlegmasia of the digestive canal of which it is the rehearsal, and when the patients sink under it, the liver is found either excessively red or of a yellowish colour, occasionally even of blackish hue, but purulent collections are very rarely found in it.

In the greatest number of cases, the lesion of the liver is therefore reduced to hepatitis, secondary to gastro-enteritis; and if authors had understood it in this way, it would have been a subject for congratulation; but they did not thus consider these kind of cases; in their opinion the hepatitis is the principal disease to which all the symptoms, even those of gastric irritation are subordinate. But this is a serious error, one to which it is highly important to call the attention of practitioners; for solely occupied with the state of the liver, they think that they may without danger solicit the secretion of bile and disgorgement of that viscus by emetics and purgatives which seldom fail in giving a fatal direction to the inflammation of the digestive canal. It is surprising that post mortem examinations have not undeceived physicians, and that in classical works they should still continue to describe these supposed cases of hepatitis, to make them pass through all the degrees of phlegmon, without even suspecting their identity with phlegmasiæ of the digestive canal.

I would wish that they should never describe hepatitis except jointly with gastro-enteritis: that they should first establish the symptoms which indicate the coëxistence of these two points of

irritation, and afterwards point out those which determine the predominance of that of the liver; in short, that they should conclude by clearly defining those which leave no doubt upon the formation of an abscess in that viscus. But these symptoms are obscure. I am aware of it. Therefore, when they do not declare themselves with clearness, it should only be said that the irritation of the liver continues after that of the digestive canal has disappeared, and no means capable of recalling and making the latter predominate in turn should ever be directed.

But this is not all: far from exacting the complete development of the symptoms of hepatitis in order to have the pleasure of conveying its diagnosis, I would desire that they should hasten to invite the practitioner to treat the gastro-enteritis which opens the scene, carefully warning him of its being the only means of preventing that disease from producing hepatitis, in the same manner as it is prevented from determining inflammation of the encephalon. In short, in reference to the few cases in which hepatitis has precedence, which may occur in consequence of concussions and wounds of the liver, I would wish that they should inspire the physician with the dread of exciting consecutive gastritis, by an abuse in the use of evacuants.

Chronic irritations of the liver are more numerous than the acute, and are produced by the same cause—phlegmasia of the digestive canal. But in the same manner that acute hepatitis generally succeeds gastro-enteritis of the same character, so chronic hepatitis, independent of local or encephalic causes, regularly corresponds to gastric phlogosis of long duration. Heat acts no less efficaciously as an exciting cause to this double affection. In most instances the irritation of the liver also tumefies and changes its nature, gives to it a yellow colour, without exciting true supuration; and when this kind of organic alteration unfortunately exists, it owes its origin to a tonic treatment, or to a too frequent repetition of purgative medicines and imagined solvents.

It is also in this way that those calculous concretions are produced that are met with in the gall-bladder and even in the hepatic ducts, which are occasionally found totally obstructed by productions of this nature. Finally, tubercles of the liver cannot be attributed to any other cause, for it is very certain that all these derangements would not exist, if it were possible, or if we knew how to arrest those irritations of the liver in their incipient

state. But whilst it is imagined that the resolution of engorgements of the liver is to be effected by purgatives, bitters, and preparations of soap, because these agents determine an increased secretion of mucus or bile, that viscus, constantly irritated by the stimulation of the stomach and duodenum, ends by so completely changing its nature as frequently not to be recognisable.

It often happens that the spleen participates in the irritation of the liver with which it appears associated, and participates with it in its sympathy with the digestive canal. However, as irritation can only produce results conformable to the nature of the tissues which it occupies, the spleen cannot present a yellow colour and biliary concretions; but, like the liver, it can present sanguine congestions, scirrhus indurations, tubercular degenerations, and seldom true collections of pus.

It is known that these two viscera, and particularly the former, never fail to become altered in the course of a few years, in habitual drunkards; and in these cases it is very evident that the mucous membrane of the digestive organs has experienced the irritation first. This also is a practical fact which has not sufficiently arrested the attention of physicians. Most of them have only observed in the dropsies of such patients an engorgement of the liver and spleen, which they looked upon as the cause of the defect in the reabsorption of the serosity of the peritoneum, and spirituous liquors were reputed to act directly upon these parenchymæ, and even upon the mesenteric glands, without their taking into consideration the chronic inflammation of the digestive mucous membrane, which had nevertheless received the first impression of these dangerous stimulants.

The same observation is applicable to intermitting fevers, which do not excite the development of the parenchymæ of the organs of the abdomen, except consecutively to gastro-enteritis. *The entity fever* was considered as acting exclusively upon these tissues, and the deobstruents addressed to them, instead of directly reaching them, exasperated the disease by acting precisely upon the parts whose irritation had produced the obstruction which these means were thought to resolve.

Finally, atmospheric heat, that agent so efficacious in exciting the morbid development of the liver and of the spleen, constantly gives rise to the same errors. These errors will endure

until physiological medicine shall have acquired that universality which it is destined to attain.

It has already been observed, indeed for a length of time, that the humidity of the atmosphere of warm climates adds powerfully to the effects of heat in the production of those fevers which have been called *idiopathic*, be they continued, remittent, or even genuine intermittent. But if it is clearly proved that these fevers are the product of an inflammation of the mucous membrane of the digestive canal, is it then surprising that this inflammation is so frequently accompanied by engorgements of the liver and spleen? It is therefore perfectly natural that, in warm and damp countries, in which gastritis and gastro-enteritis are met with, there should be simultaneously found many engorgements of the parenchyma of the organs of the abdomen?

But it must be admitted that the liver and spleen, which in our climate are always disordered by the effects of gastro-enteritis, become much more tumid when this disease is constantly kept up by the influence of a degree of heat which scarcely experiences any remission throughout the year. Therefore the following proposition, in my opinion, is as correct as the two preceding: *gastro-enteritis always causes an irritation of the liver, but that irritation is ordinarily followed by more considerable tumefaction when the gastro-enteritis upon which it depends is constantly maintained by the influence of a damp and warm temperature.*

A physician who has practised in temperate or cold climates only, will find it difficult to believe the extent to which this cause influences the production of chronic splenitis and hepatitis. The following letter will show how necessary it is not to generalize too much the observations made only in the country.

Paris, January 31st, 1822.

SIR,

“As you have had the kindness to express a wish that I should communicate to you the general results of my observations respecting diseases of the liver in the various warm climates through which I have passed in the course of my travels, both in the Brazils and in India, I will endeavour to fulfil a duty which your great attention and kindness to me forbids me to neglect.

“I begin with the Brazils, where I directed autopsies to be

made, and where I have assisted at the opening of a great number of bodies, both at Rio Janeiro, where I have at intervals spent much time, and at Pernambuco, where I held the situation of surgeon-major in one of the corps of the division sent there in 1817; and as I was intimately acquainted with some of my colleagues employed in the military hospitals, they enabled me to prosecute such observations with facility. I venture to assure you that diseases of the liver and the spleen are as common in these countries as those of the lungs are here, *and vice versa*, and quite as obstinate, owing particularly to an ignorance of the proper treatment. Here cold produces and keeps up diseases of the lungs; there the extreme heat and immoderate use of brandy in some cases, and spices in others, &c. produce gastro-enteritis, which improper treatment renders chronic, and hence the prodigious engorgements of the liver, and especially of the spleen, which sometimes even reach such an extent as to form a hernia in the inguinal region. I do not mean to say that there are not also primitive diseases of the parenchymæ of these organs, as those which arise from a blow upon these parts, &c. but these are comparatively speaking the least dangerous, because physicians do not mistake their character; and they are easily cured by antiphlogistic treatment and leeches; but in those cases which are consecutive to gastro-enteritis, or accompanied with any febrile action whatever, emetics, wine, cinchona, &c. &c. are used in profusion, not only to break up the accessions, but principally to anticipate the debility which to those unacquainted with the new doctrine appears most alarming. There are even some, I must acknowledge it, who pretend to cure these chronic engorgements, especially those of the liver, with cinchona in substance combined with rhubarb. Those who are the most inclined to the opinion of gastric obstruction, pretend to cure it by emetics; and from this cause I had the melancholy opportunity of witnessing at Pernambuco the death of a poor woman, whilst vomiting great quantities of bile from the effects of a third emetic. The reflections which I submitted to these physicians, and particularly to the one who directed the treatment in the last-mentioned case, did not produce any effect. I met with no better success in convincing the patient, who was overjoyed at the idea of being freed of so much bile. Engorgement of the ganglions of the mesentery is also very common; but it is considered, (and I viewed it in the same

light,) as a proof of the absence of tone in those organs, or as produced by the effects of cinchona, without knowing in what manner; hence according to the English method, calomel and various purgatives are used with prodigality. As to the mucous membrane of the intestinal canal, I did not seek the cause of the evil; but the cases of diarrhœa and dysentery, which I find frequently mentioned in my note-books, I can now clearly attribute to the constant presence of phlegmasia in the digestive canal. The white layer which I also found upon the lungs incontestibly convinces me at the present day of inflammation of the pleura, and I find it noted as a simple concreted albuminous exudation; but the symptoms are recorded as nearly the same as those which I have observed in patients that you have shown me at Val-de-Grace, and in whom an examination after death demonstrated the existence of pleurisy.

“At Manilla, the capital of the Phillipine islands, my observations were confined to symptoms, not only because a residence of three months and a half was too short to allow of making many observations, but because the extreme ignorance in anatomy, (and in almost every thing else,) of the physicians of that country, and the superstition which even they entertain, interdicted me altogether from post mortem examinations. But I can assure you that the endemic diarrhœa of that city is most certainly a chronic colitis, which almost always makes its first appearance by a more or less intense gastro-enteritis, for I perfectly recollect that the patients to whom I was called in consultation, all had sensibility in the epigastrium, diarrhœa, vomiting, &c. As to Macao, in China, at which place I remained nine months, the climate differs greatly from that of the places I have just mentioned, and these diseases are much less frequent.

“My crew had some attacks of gastro-enteritis in consequence of eating a fruit which the Chinese call *chia*, and which having a very pleasant taste, appears to be very stimulating. However as I did not lose a single man during a long voyage of one-and-twenty months, I cannot speak of examinations after death. I candidly confess that to me there appears something extraordinary in certain countries, such as Benguela in Africa, where lesions of the liver are always accompanied with enormous engorgements of the spleen, which are so extensive as to produce hernia, as I observed in 1812, in the case of M. Soares, who had re-

turned from a voyage to that country. I should remark that I knew that young gentleman eight or ten months before, in very good health, and that I saw him again in 1817, at Bahia, still ill and still taking the tincture of bark occasionally on account of paroxysms of intermittent fever which returned from time to time. However, his spleen which had appeared as hard as wood, was considerably diminished both in size and consistency.

"I shall conclude with one observation which appears to me deserving of the attention of physicians, which is, that I have several times known the liver to be diseased without the spleen being so; but I never knew this latter so without lesion of the former, in chronic affections, of course understood.

"With sincere attachment, I have the honour to be, sir,

"Your devoted servant,

"MANUEL-JOSE VILLELA."

Without having practised in latitudes as warm as those visited by M. Villela, I have had opportunities of seeing some cases of phlegmasia of the liver. A man entered one of my wards at the hospital of Udine, with active fever, accompanied with jaundice and even vomiting of bile. Prostration soon made rapid progress, attended with fuliginosity, stupor, delirium, sub-sultus tendinum; and notwithstanding the use of acidulated drinks and the most severe diet, for at the period in question I did not know the full value of leeches, I had the misfortune to lose this patient. I had not observed any tumefaction in the region of the liver, so that I was induced to compare this disease rather to yellow fever than to hepatitis. The opening of the body, however, exposed five or six small abscesses in the substance of the liver, independently of very decided redness of the stomach and intestinal canal.

Another soldier suffered much in the hepatic and throughout the epigastric regions; he was yellow, the fever was violent, agitation at its height; the whole accompanied with interrupted laborious breathing, and convulsive action of the muscles. He died like the preceding, at the end of a fortnight, and instead of anticipated hepatitis, I found strongly-defined gastro-duodenitis, with a liver of the natural colour, although tumefied by sanguine engorgement. But what astonished me the most was discovering in the duodenum an enormous lumbricus, one-half of which was within the ductus choledochus, and another equally as large, which had

pénetrated even into the parenchyma of the liver, following the same course as the preceding.

It will be seen, by these two cases, how difficult it is to be asured of the existence of phlegmonous hepatitis. All that can be distinguished is irritation of the liver coincident with that of the digestive canal. But that irritation in whatever manner it may alter the secretory organ of bile, should always be considered as an inflammatory phenomenon, and the indications, as they result from this cause, are always essentially the same, whether there is reason to suspect a tendency to suppuration, or whether there is no apprehension of the kind. Under all circumstances, the fundamental point is to arrest the irritation, without conjecturing what kind of alteration it might have determined in the end.

I might still find in my clinical note-books many cases of gastro-entero-hepatitis, with or without abscess of the liver, which would additionally confirm these conclusions, but they would not afford more interest than the preceding. Therefore I shall conclude by adding a few words upon the therapeutics of the form of chronic phlegmasia now under consideration.

I have already remarked that the treatment of chronic engorgements of the liver by purgatives, bitters, irritating substances, such as saponaceous préparations and sulphurous or acidulated mineral waters, would be seldom other than palliative. The experience of centuries has already confirmed it; for those labouring under these obstructions, treated by these means, are only seen cured for a certain time; and at the expiration of a few years, physicians are obliged to abandon them, and the patients perish in a state of marasmus, either from vomiting or from diarrhœa, or else in a state of dropsy. A few of the strongest escape by a metastasis which excites those violent alternatives, viz. hæmorrhoidal discharges, erysipelas, phlegmons, &c. But they can only preserve their health by adopting a severe regimen. This is admirably explained by the gastro-enteritis which always precedes and accompanies those hepatic tumefactions, true inflammations consecutive to those of the digestive canal. In fact, how are those bilious evacuations obtained which diminish the intumescence of the liver?.... By the stimulation of the already phlogosed mucous membrane of the stomach and duodenum; consequently the treatment itself keeps up the cause of the disease. It is therefore not astonishing that it should be constantly

renewed. I shall content myself with reporting one case, which will suffice to point out the injurious effects of that practice, and to illustrate the course which it is indispensable to pursue in order to accomplish a radical cure.

M. the Count of —, aged forty-five years, of a robust constitution, and corresponding to that which authors have called *bilioso-sanguine*, suffered during four years from a deep-seated pain in the right hypochondrium, with languid digestion, eructations, yellowness of skin, irregular febrile action; and every seven or eight days violent colic followed by bilious stools, and occasionally by vomiting. If this excretion did not take place at the usual period, his habitual symptoms increased to such a degree as to render his situation insupportable. His physicians also thought it requisite to promote the evacuation of bile by purgatives, the effect of which was followed by considerable relief; but it was constantly necessary to resort to these means, and the strength of the patient decreased with alarming rapidity during the last six months. The patient was advised to visit the Springs of Vichy. It was followed by vomiting, a variety of symptomatic pains, and increased emaciation. At last M....., reduced almost to marasmus, was recommended to my care by his physician.

I put him upon the regimen for chronic gastritis, as is recommended in this volume, and strongly insisted upon the necessity of renouncing the periodical purgatives to whose good effects he attributed the continuance of his existence. The patient had the courage to submit to it, with the greatest regularity, during almost a year. By degrees his appetite returned, his strength increased, the bilious evacuations which it was only thought necessary to promote by emollient enemata, ceased to be any longer necessary; the hepato-duodenal pain disappeared, and his *embonpoint* is at the present day about the same as before his illness.

This practice is the only one which can succeed, and when it fails, it must be attributed to disorganization having already taken place in the diseased viscera, and not in the least to the inefficacy of the means. But what can be expected from their action when the liver is degenerated, suppurated, or altered in its texture by cysts or by hydatids, a species of degeneracy which in the present state of medicine can only be referred to the prolongation of an inflammatory action of the biliary organ?

SECTION SECOND.

Phlegmasiæ of the Kidneys and Urinary Bladder.

The kidneys become inflamed, like all the other viscera, by the premature action of irritants, or by the sympathetic influence of some other organ upon their tissue. In the first series, we find external violence and the action of cold, which often extends to those organs after having produced an irritation of the fibro-muscular system. To these must be added a too nourishing and too highly-seasoned regimen, such as black meats, the use of strong wines, the abuse of diuretics, &c. In the second series, phlegmasia of the urinary bladder comes first in order, and next hæmorrhoidal and uterine irritations, the suppressed discharge of which is occasionally followed by phlegmasia of one of the kidneys.

Irritated by these causes, the kidneys may contract acute phlegmasiæ, and if they are less violently affected, and consequently chronically, they may engender calculi, or else degenerate in the form of cysts or of cancer; in each of these cases the patients become subject to frequent attacks of what is called *nephritic colic*. They are sometimes relieved of it after severe suffering, by the expulsion of a calculus or by the excretion of a sandy substance; but as the irritation continues as long as the causes exist, a relapse is infallible. At last a period arrives at which, notwithstanding the removal of the exciting causes, habit, or an alteration in the renal tissue reproduce the disease, in defiance of all the best understood hygienic precautions.

All these misfortunes would be prevented if it were possible to ascertain that all the organic diseases of the kidney, and even calculous concretions, are the pure and simple effects of common irritation, because endeavours would be used to remove that irritation at its commencement, and to prevent its return by a removal of the exciting causes; but instead of that, what is the course generally pursued? Bleeding is only resorted to in those cases of irritation which border on phlegmon. But in those which are inclined to chronicity, which are unattended with fever, and which are vulgarly designated by the name of *nephritic colic*, the treatment is confined to demulcents, baths, and antispasmodics, and it frequently happens that the most active are selected from amongst

the last, notwithstanding the continued decided irritation of the stomach. The colic is no sooner allayed, and only an acute and deep-seated pain remains, than the phlogosed kidneys are acted upon in the same way as the liver, attacked with chronic inflammation; the organ is excited to an extraordinary action by means of diuretics, and if an increase of urine, the ejection of sandy matter, or the expulsion of a calculus are obtained, the success is rejoiced at, and renewed pains are waited for, in order to repeat the same treatment.

It is thus that phlegmasia of the kidneys is kept up, which can have no other termination, after a certain lapse of time, than the degeneration of the viscus.

I have been frequently called upon to treat these diseases from their very commencement, when the nephritic colic, unattended with fever, appeared for the first time, in consequence of an evident cause, such as the cessation of an hæmorrhage, the transfer of a rheumatic irritation, &c. Instead of being satisfied with baths, emollients, and antispasmodics, I hastened to cover the region of the diseased kidney with a great number of leeches, and these means, with such other as were suggested by circumstances, always sufficed to place the patient beyond the reach of a chronic state.

When the kidneys are irritated by the sympathetic influence of a phlegmasia of the urinary bladder, they are equally liable to the formation of calculi and to alterations in their tissue; in these cases all the attention should be directed to the principal affection. Chronic catarrhs of the bladder, which originate from cold or from the transfer of a cutaneous irritation, or from blennorrhagia which has extended throughout the urethra, are the infirmities which must then be relieved. Every one is acquainted with the symptoms of these affections; therefore, I shall not stop to describe them with minuteness; I shall simply give an account of the method which I have found most successful in curing and in preventing all the consequences which might result from them.

When irritations of the bladder, which are sufficiently characterized by local pain, inclination to frequently void urine, and by the mucus with which that fluid is charged; when these irritations, I say, are still recent, it is not difficult to remove them by local bleeding, followed by demulcent drinks, baths, and emollient topicals. But

still more may be done; for it is my opinion that in prolonged catarrhs of the bladder, these means are almost always the most efficacious. Others have frequently been tried, such as the *uva ursi*, the *pareira brava*, the essential oil of turpentine, &c. but it is seldom that the desired effect is obtained. I have occasionally made use of mercurial frictions with success. Moreover, if the patients are endowed with sufficient firmness to submit to privations and to regular practice, they may be confined to demulcent drinks and to farinaceous or a milk regimen, and they may even be prevailed upon not to satisfy their appetites, to bathe daily, to apply from time to time a few leeches over the hypogastrium or to the perinæum, to desist from fatiguing exercise, to wear flannel, and finally to scrupulously abstain from coition.

A few examples will show the utility of the precepts which have just been given in relation to the therapeutics of the kidneys and urinary bladder.

A lady, thirty-four years of age, of a strong constitution, and remarkably stout, had been subject for seven years to nephritic colic, which, after protracted suffering, even of several weeks, was attended with the discharge of calculi, the excretion of which was scarcely followed by a cessation of pain, for the disease frequently returned after a few days. She informed me that the cause of this infirmity was great mental distress, produced by hearing of the death of her mother, which reached her during her menstrual period. The discharge had been suppressed, and the patient had immediately felt pain in the region of the left kidney. The pain had assumed different forms, and treated for more than a year by a number of physicians, among whom were those of the greatest celebrity, had finally characterized itself by the discharge of several calculi. Since that period, this lady had taken a variety of medicines reputed as diuretic, anti-nephritic, &c. always for the purpose of expelling the calculi, and fresh ones constantly formed. Moreover, her diet was not regulated, and she had only been submitted to the use of aromatic infusions, such as the flowers of the linden tree, the leaves of the orange, &c.

I saw clearly that the calculi depended upon an irritation of the left kidney, excited by the transfer or by the deviation of the vital action which presided at the menstrual flux. I conceived that if from the first, and without endeavouring to refer the suf-

fering of the person to any particular disease, of a nosography, or of a classic author of any sect whatever, the only thing observed in this case had been a point of irritation which it was necessary to allay, in order to avoid every kind of organic alteration, the habitual generation of calculi would not have been established. It was impossible to recall the past; but I could at least assuage the irritation which preceded the discharge of the calculi, and a secret inspiration whispered that perhaps they would discontinue to form. Therefore, instead of saying to myself, *these pains are the result of calculi already formed in the kidney, and the most pressing indication is to promote their excretion by diuretics*, I reasoned thus; *the pain evinces an irritation of the kidney; this produces the calculi, and if I can dispel it before they are formed, their discharge will be no longer necessary, as they will no longer exist*. Consequently, I prescribed leeches to the region of the kidney, baths, orange sherbet for drink, to eat oranges in great quantities, to admit but little animal substance in the usual regimen, and to wear flannel next the skin. Now, for the last four years that this lady has submitted to this course of treatment, she has suffered much less; the nephritic attacks, constantly met at their commencement, have proved abortive; they have insensibly diminished in intensity, and what is very surprising, there has not been a calculus discharged, whilst formerly it occurred five or six times every year, and occasionally they equalled the size of a pea. I leave practitioners at liberty to draw from this case such inductions as may appear to them most proper. I shall conclude by giving some examples of catarrh of the bladder cured in a longer or shorter time after their first appearance.

An officer convalescing from rheumatism, was chilled in crossing the corridors of Val-de-Grace, on returning from a bath to which he had gone covered with only a morning gown. From that very day he suffered from the bladder; and in the space of three or four days, his urine, which he was obliged to void every quarter of an hour, brought with it a large quantity of mucus. I directed the application of thirty leeches to the perinæum and prescribed diet, marsh-mallow ptisan, and in five days the disease was removed.

An adjutant of one of the regiments of the garrison of Paris experienced during the past summer a very severe pectoral catarrh; under the use of leeches and antiphlogistic regimen it

yielded in seven or eight days. But it was succeeded by gastro-enteritis of moderate intensity, with scarcely any fever; opposed by the same means, it appeared to yield at the end of five or six weeks. But whilst the powers of digestion were becoming restored, a pain developed itself in the cavity of the pelvis, resembling partial peritonitis. I again applied the means which had succeeded in dissipating the other two points of irritation; the tumefaction of the hypogastrium and the tenderness to the touch abated; but the excretion of urine became painful, frequent, and deposited a quantity of slimy matter. I persevered in the use of leeches, but as the patient had been already more than four months at the hospital, I confined myself to the application of six or eight from time to time, yet the vesical catarrh did not yield; in other respects his digestion was perfectly good and his chest indicated no symptoms of irritation.

One day whilst explaining the progress of this affection to the students who followed me in my visits, I observed to them that perhaps a little more boldness in the use of leeches would suffice to remove this last point of irritation; but that the diminution of strength in consequence of a long residence at the hospital, made me unwilling to attempt it. The patient who heard me, eagerly seized the idea, assuring me that he was not so feeble as I supposed and entreated me to order for him fifty leeches. I consented, and to the great astonishment of the clinical students, the catarrhus vesicæ which had continued more than a month, was entirely removed. The patient reëntered the hospital two months afterwards for a slight gastric derangement produced by a severe mental affection, and mentioned that he had had no return of the irritation of the bladder. A few days of rest having restored him, he left it enjoying the most perfect health.

I have many other cases of catarrh of the bladder supervening upon the decline of gastro-enteritis, which invariably yielded to the same treatment. But satisfied with having established the theory of irritations of the urinary passages, I reserve those facts for some other occasion, that I may not render this work too voluminous.

CHAPTER IV.

INFLAMMATION OF THE PERITONEUM.

INFLAMMATION of the peritoneum observed by Johnston in 1779, in lying-in women, again presented to the attention of observers in 1785, by Walter, a celebrated Prussian anatomist, and at a later period by M. Pinel, who in the first edition of his *Nosographie Philosophique*, established in the happiest manner, the relation between the phlogoses of the different transparent membranes, was finally closely studied by the immortal Bichat; but he was only able to announce its most prominent symptoms and characters. M. Gasc, one of his pupils, made it the subject of an inaugural dissertation which was received with much interest. Since that time peritonitis has been observed, verified, and studied by all the physicians of Paris who have devoted themselves to the study of pathological anatomy. MM. Bayle and Laennec have inserted in the medical journals descriptions of the different disorders to which this inflammation gives rise. M. Laennec has published several cases of acute peritonitis observed at the Charité, in the *Journal of Medicine* conducted by MM. Corvisart, Roux and Boyer. M. Bayle has more particularly attended to the organic derangements, as observed in the dissecting rooms of the School of Medicine, than to the description of the symptoms of the disease. He also remarks that women recently delivered often die of peritonitis. Since then, well written theses and dissertations have proved that this phlogosis is precisely similar to that occurring in men, or at other periods of their own lives.

Peritonitis then is perfectly verified, but it is only known in its acute form. MM. Gasc and Laennec, in what they have published, have only described the most striking and unequivocal symptoms which are now known to all physicians, namely, sensibility, tension, elevation of the abdomen, nausea or vomiting, constipation and fever. M. Fizeau observed one case produced by an effusion of bile, arising from the rupture of the *ductus choledochus*, which lasted thirty-three days, and which was so ob-

scure as not to manifest itself during life except by a very obtuse sensibility of the abdominal region, which induced languor and debility. This is the only case of latent peritonitis with which I am acquainted, which appears to me to be sufficiently well described to be cited as a foundation of the theory of this inflammation.

The history of this disease is therefore, it may be asserted, still to be compiled, at least as regards the symptomatology; for the anatomical part is further advanced, since M. Bayle has observed in the peritoneum far more varieties of disorganization, than we are acquainted with forms of phlogoses.

Hence what we now possess on peritonitis are reduced, 1st, as regards the symptoms, to the pain in the diseased part, with vomiting, constipation and fever; and one case in which these signs were not strongly marked; 2d, as regards the organic derangements, to a certain number of alterations of the tissue of the peritoneum, which I will now condense from M. Bayle.

When the peritonitis had been fatal in a short time, he found, 1st, the peritoneum red and thickened; 2d, an exudation of a yellowish or greenish-white, in the form of a false membrane agglutinating the viscera together; 3d, a turbid, yellowish, whitish liquid effused in the cavity.

When the peritonitis had been chronic, he observed that it occasioned, 1st, a bloody serosity, or a dirty grayish liquid; 2d, more or less intimate agglutinations of the viscera, either immediate or by the formation of cellular tissue; 3d, an accidental, free, and floating tissue, developed by the inflammation, and which had passed from the liquid state to that of the most perfect organization; 4th, thickenings of different portions of the peritoneum; 5th, hard granulations, which appeared to be part of the peritoneum, and which were probably nothing more than a transformation of the exuded matter which had passed from a liquid to an organized state; 6th, there was no marked injection in two subjects who died of chronic peritonitis.

Inflammation of the peritoneum is not a common disease; it is happily one of those phlegmasiæ whose production depends on certain circumstances which are met with but in few individuals; but these circumstances themselves do not appear to be well known. The principal is immediate irritation, as we shall show hereafter; but this cause is, of all those which usually produce

the phlegmasiæ in general, the most rarely in action on organs which have no immediate communication with external bodies; of this character are the serous membranes.

We should not be astonished that the mucous membranes inflame; they have a double cause for so doing: 1st, the impression of external bodies; 2d, the action which is accidentally developed in them, generally to replace that of the skin, when this is deficient or wanting. The inflammation of the serous membranes, which do not come in contact with foreign bodies, is generally caused by this second mechanism; hence they are less frequently inflamed. That of the thorax, covering a tissue amply supplied with arterial capillaries, and exposed to a more violent action, is also the most subject to phlegmasiæ; but it is also very evident that it experiences them much less frequently than the mucous membrane. It requires a local predisposition for this metastasis of action, of which we have spoken, to be directed rather to it than to the latter membrane. The same law holds good as regards the abdomen; at first the presence of foreign bodies, afterwards metastasis of the secretory action more generally directed to the mucous than to the serous membrane. If it were otherwise, we should see innumerable victims of inflammations of the diaphanous membranes.

It is then evident that these membranes, although designed to furnish a very abundant exhalation, have not been placed by nature in a relation of alternation with those surfaces which communicate with the exterior, and that they only become dependent on them under certain extraordinary circumstances, which it is important to know.

Of all these circumstances, the most striking is an unusual susceptibility, acquired from the effect of contusions and too violent and too often repeated frictions. It cannot be doubted but that this cause disposes them to an over-exhalation, on account of the chilliness of the skin and shrinking of the external capillaries, as alone it may inflame them. As to others, they are unknown to me. There are, perhaps, certain epidemics of peritonitis. Dr. Lagneau, well known in the School of Paris, by an excellent dissertation on the treatment of the venereal disease, told me that he had seen, in the army at Bruges, in the year 11, peritonitis very common among the soldiers of a regiment of light infantry, particularly among the negroes, and in most cases he had

verified it by dissection. He could give no other reason for the frequency of this phlegmasia, than attributing it to humidity and cold. I have myself often observed it in Belgium and Holland, but almost always in men affected with intermittent fevers, and then it was chronic, and did not appear to have commenced violently.

After the campaign of Germany, of 1805, which terminated, for our corps d'armée, with the battle of Austerlitz, peritonitis almost always appeared in relation with some evident external cause. In Italy it also presented itself, but more rarely; which makes me regret that I had not collected all the cases of those in whom it was owing to the fatigues of the march or some other accident.

Nevertheless, although I have lost the details of many cases, I still have enough to establish some points of doctrine. I will first announce them in a general way; I will afterwards report the cases which I have to support them, and will conclude my undertaking by condensing what I know of the general history of peritonitis, and in detailing the curative plans which appear to me the most rational.

Peritonitis has as a fundamental character, pain of the diseased part, with fever; but this supposes that it suddenly attacks a healthy person, enjoying the quantum of strength and sensibility belonging to his temperament. Then it is short in its duration, and may be very advantageously modified by curative means. But of how many different shades is it not susceptible when it arises in an individual enfeebled by errors of regimen or by disease; when it is provoked by a cause which acts feebly, but whose action is continued; or finally when, this cause no longer acting, the derangement which it has left, although feeble at first in itself, is not removed, and must, by the mere lapse of time, finish by entirely disorganizing the tissue of the peritoneum!

In these different cases, the phlegmasia under consideration produces very various lesions in the play of the functions; at one time we see them appear without fever, but with much pain in the acute stage; at others, it appears to confound itself with rheumatic and pleuritic pains; in some cases it may only occasion an obscure febrile action, and only sensible towards evening; in others, assuming a still more insidious character, the peritonitis

causes neither fever nor pain; ascites, it may be said, is the only indication of it, and oftentimes a universal dropsy arises, and causes the greatest confusion in the symptoms.

If the peritonitis is complicated, new difficulties arise. I have seen it confound itself with pleurisy, be disguised by gastritis or enteritis, so combine its symptoms with those of engorgement of the mesentery, or phlogosis of the spleen, that any physician would have been deceived.

These different combinations induce changes in the nature of the pains and in that of the fever, which always receives a fresh impetus from the affection of the parenchymata, and the presence of ulcerations which communicate with the external air. On the other hand, the kind of stupidity of certain patients, the false ideas they have conceived of the cause of their disease, the effects they attribute to the treatment they have been subjected to, the errors of perception to which the most intelligent are not the least exposed, form so many snares which tend to mislead the judgment of the physician who devotes himself to the study of these diseases.

To aid as much as my powers and the materials I possess are capable of doing, in the removal of these difficulties, I will enter on an exposition of facts, and will commence with those acute peritonites which have the closest relation to the description given us by the most modern writers above cited, MM. Gasc and Laennec.

CASE XL.—*Acute peritonitis resembling continued ataxic fever.*—Bonne, aged twenty-six years, dark complexion, large, muscular, and robust, arrived at the hospital of Medemblick, the 4th Fructidor, an XIII. having been transferred from Helder. I remarked an air of suffering, livid, contracted, and altered countenance, dry tongue, *mumbling*, very loquacious delirium, continual restlessness; he constantly uncovered himself, and played with every thing that came within his reach. He did not complain of any thing, but in examining him it was discovered that his abdomen was somewhat sensible to the touch. The pulse was rapid, depressed, and very feeble. He presented an image of the last stage of ataxic fever; I could do no less than prescribe antispasmodic tonics for the night.

The next day, the tenth of the disease, there was no change. I ordered sinapisms to the thighs, proposing to repeat the revulsives every day, as I have often practised with success in fevers with debility and cerebral irritation. But between twelve and one o'clock the pains in the abdomen were intolerable, extreme sensibility of this part on the slightest touch, continual moans. Ordered an injection which did not penetrate; emollient fomentations. No relief. The patient was soon in a convulsive agitation, uttering piercing cries. I had him placed in a warm bath, where he remained three-quarters of an hour, taking every fifteen minutes a spoonful of an antispasmodic potion, made with laudanum and sulphuric ether, in a demulcent vehicle. Bonne left the bath without any pain, and walked to his bed. I afterwards found this patient calm, and without any delirium, with a pulse more developed and the skin moderately warm.

He was now able to give me an account of the commencement of his disease. He had experienced on board the vessel in which he had embarked at the Texel, some gastric symptoms, loss of appetite, bitter taste in the mouth, nausea, chills, and general uneasiness. An emetic was given to him, during the operation of which he felt the first attack of the pains in the abdomen. These pains having never ceased, he was sent to the hospital at Helder, from whence he was transferred by sea to that of Medemblick.

This account led me to judge that the principal disease was a peritonitis. As it had not as yet been treated in a direct manner, I endeavoured to combat it by bleeding, emollient fomentations, relaxing drinks, &c. The evening was calm; I could not discover any thing unusual except a tolerably moderate sensibility of the abdomen on pressure; the patient did not suffer when he was perfectly quiet.

The eleventh day in the morning I found that the pain in the abdomen was renewed; the patient began to be restless, but was not delirious.—Fomentations.—An attempt was made to put him in the bath, but the pains increased to such a degree that he was obliged to be removed from it. During the remainder of the day the patient was agitated with a convulsive trembling, changing his position every moment, and uttering plaintive cries, which weakened him more and more. The abdomen could not bear the weight of the bed-clothes. I was tempted to recur to leeches, but

the contraction of the features, the alteration of the complexion, and the weakness of the pulse deterred me,* and induced me to think that disorganization had taken place. I contented myself with prescribing comforting anodyne potions with the design of somewhat palliating his sufferings, but he could not swallow any thing. The blisters which I applied on both his thighs produced no change in his condition.

The next day, the twelfth, he was calm, motionless, his face livid, his eyes haggard, raving on all subjects, but in a broken voice, and without any agitation. He did not complain of suffering in any part, and said he was very well. On pressing the abdomen, however, it was perceived that he made a movement and a grimace. The extremities were cold, the pulse small frequent and gaseous. I prescribed a camphorated decoction of bark in large doses, and wine.† At meridian, deafness and insensibility, although he was not comatose. At two o'clock he suddenly expired without agony, almost whilst speaking.

AUTOPSY.—*Habitude.* Body extremely muscular and well-formed. *Head.* Pia mater somewhat injected. A little serosity in the inferior fossæ; the consistence of the brain tolerably great but no sensible disorganization. *Thorax.* The lungs much engorged but crepitant. The right lobe every where adhering by a well-organized tissue which appeared to be of long standing. The heart was in a natural state; no serosity in the pericardium. *Abdomen.* The peritoneum was red, amazingly filled with blood-vessels, and about a line to a line and a half in thickness, particularly over the ileum, where there were likewise blackish livid spots. Dissection proved that they were eschars, implicating the whole thickness of the intestine.‡ Except this, the two internal membranes were in a natural state. On the omentum, the mesentery, and the ileum, the serous membrane was covered with a solid exudation, of a whitish-yellow colour, which caused an adhesion of the two surfaces. The portion of the peritoneum which extends over the bladder was in the same state as that of

* Here is one of the benefits of the degenerated Brunonism with which the French school was infected.

† I cannot now read this case without shuddering.

‡ This proves that the phlegmasia of the mucous membrane preceded that of the serous; for primitive peritonitis does not implicate the internal membrane of the hollow viscera.

the intestines. But the mucous membrane of this viscus was healthy. The phlogosis was slight and limited to a bright red on the liver, stomach, and spleen. There was no effusion in the pleura or peritoneum.

Observations.—Here is a case of as violent peritonitis as it is possible to meet with; but from not having been properly treated at its commencement, it was unrecognisable at the time of the patient's arrival; the nervous disorders masked it so much as to resemble ataxic fever,* and if the suspension of the pains had not caused a disappearance of all these nervous symptoms, and momentarily left the phlegmasia undisguised, I should never have recognised the disease except by the post mortem examination. All phlegmasiæ at their height have the same result on the sensitive apparatus, and wo to the physician who is not accustomed to fathom it! He may give the death stroke. The oversight was perhaps of no consequence as regards the disease of Bonne, because the evil was already of too long standing from the moment of his arrival, to have been curable.† But it is not always so. I have seen peritonitis yield at a more advanced period. There are subjects whom the least pain makes delirious. These may be very susceptible of cure, although the phlogosis is very ancient. The delirium therefore is not a proof of incurability. We have seen this truth demonstrated as regards the phlegmasiæ of the mucous membranes, and I have no doubt but that it is applicable to those of the serous, although perhaps more rarely.

Although we cannot fully rely on the exactness of the patient's account of the primary symptoms, we must not omit paying attention to the emetic which appears to have preceded the development of the pains: whether the phlegmasia had been formed before it was administered or not, it is still certain that it must have increased it. An additional motive for bearing in mind the influence of inflammatory pains on the sensitive centre, when it is wished to seize the indication in the commencement of diseases; for example, if the nausea which induced the employment of the emetic depended on the peritonitis, how much Bonne is to be pitied, that it was not interpreted properly!

It only remains for me to observe that the elevation of the abdo-

* Ah! why do we find in authors an entity termed *ataxic fever*?

† I do not think so now; *experientia magistra*.

men was not perceptible in this patient. It was rather depressed than meteorised. This disposition is by no means rare.

The following case will show a variety of acute peritonitis, in which this symptom was likewise wanting. It is as well adapted as the preceding to demonstrate the importance of habituating ourselves to interrogate all the functions, before explaining the symptoms of a commencing disease, and how carefully we must be on our guard against appearances of debility which may remove any suspicion of an inflammatory disease.

CASE XLI.—*Acute peritonitis, simulating nervous colic.*

—Bougeot, aged thirty-nine years, dark complexion, hairy and athletic, entered the hospital of Udine on the 7th of August, 1807, to be treated for a violent colic with which he had been tormented for nine days; it consisted in dull but continued pains, which increased in the evening, and sometimes became excruciating during the night. He had made a frequent but ineffectual use of theriac in wine, of toast and wine, of injections, and of several ingredients of an exciting character. During this period he several times had spontaneous vomitings, and the constipation was invincible.

At the time of his admission, this man had an air of inquietude and suffering, a fresh and high colour, contracted and not frequent pulse, rather feeble than strong; the skin was somewhat hot, the abdomen neither tumid nor meteorised, but slightly sensible to the touch, except it was forcibly depressed; the mouth clean and in good condition. I put him on the use of the acidulated solution of gum and anodyne juleps. Amelioration.

The next day he was tranquil and suffered but little; I perceived only a slight uneasiness, and the patient complained of nothing but a sensation of painful fulness and accumulation in the abdomen with anorexia. Solution of gum, oleaginous potions.

The third day the obstinacy of the constipation appeared to me to require some evacuants. I made him take several doses of a decoction of tamarinds with honey. Increase of the colics which became agonizing; the patient never ceased tossing about and turning during the remainder of the day and the whole night, but still there was no fever. The laxative drink had procured no urinary excretion. I hastened to restrict him to the exclusive use of the mucilages.

Having examined him with additional attention, I still discovered no external symptoms of peritonitis. There was, it is true, dull and constant pain with constipation, but the abdomen was rather depressed than prominent, and although pressure on it was painful, I did not dare to believe that this pain arose from the peritoneum, because it was only felt when a certain degree of compression was employed. Besides there was no fever, and this symptom appeared to me should always exist with acute peritonitis in so robust and florid a subject. I thought rather of gastritis or phlogosis of the mucous membrane of the stomach.*

The succeeding days increase of the pain, no remission, disturbance of the pulse, skin rather more heated. The fixed character of the abdominal pains no longer permitted me to doubt as to the peritoneal phlogosis.—Emollient fomentations. Six leeches to the margin of the anus. Great relief, diminution of the reaction, calm and sleep during the night.†

From this time to the sixteenth day of the disease, continuance of the pain without any remission; the nights especially were marked by horrible sufferings, which made Bougeot despair, and wish for death. The pulse which from the moment of the appearance of the febrile action was still consistent, now lost this and became small and frequent, the face contracted and altered; the skin became rather cold than hot, adhered closely to the muscles, and was of an ochrey-red colour, as in gastritis.—The remedies I made use of were emollients and leeches, which were repeated to the anus and abdomen, at the request of the patient, who obtained no relief except from them; he was disgusted with the oleaginous drinks; he could scarcely swallow broth.

From the 16th to the 18th, diminution of the pains, a kind of calm. If the debility had not increased, I should have thought that he began to grow convalescent. On the evening of the 18th, return of a paroxysm of colic, but short and not violent. During the night, delirium. He dressed himself and wished to leave the hospital.

* The doctrine of irritation would have extricated me from this embarrassment; what matter was it in fact in which of the abdominal tissues the irritation was placed? It existed, and the indication was to remove it by leeches.

† Instead of six leeches to the anus, there should have been a hundred to the abdomen.

In the morning I found him sane, but saying that he felt very singularly. No colics, pressure but little painful. Complexion fresh, physiognomy natural. He had had several easy stools without pain; he wished for a little food. Notwithstanding this amelioration, I was struck with the extreme feebleness of the pulse, which could scarcely be felt; and the degree of prostration of his muscular power. A weak soup and some wine were allowed him. He expired towards evening in a violent convulsion.

AUTOPSY.—*Habitude.* The body, which was very fleshy and muscular, remained in a convulsive attitude. All the muscles were in a state of contraction. Their tissue was exceedingly firm and highly coloured. *The thorax* presented no derangement. *Abdomen.* The peritoneum was found red and thickened in every part, and covered in some places with a white exudation. In the majority of its folds this membrane was red, thickened, and without any liquid adhering to its surface; but it contained a small quantity of lactiform serosity. The mucous membrane of the stomach appeared red and brownish; that of the intestines was perfectly natural.

Observations.—The symptoms of the peritoneal phlogosis were reduced, in this patient, to a permanent pain, with constipation, increasing at night. It was seen, obscure at first, to increase prodigiously by the effect of a purgative. Might we not consider the vermicular contractions of the muscular coat of the intestines as a cause capable of again inviting an increase of sensibility to the inflamed peritoneal surface?

This idea appears plausible to me; for why is there always constipation in peritonitis, if it were not that the peristaltic movement was painful? All friction, all pressure of the peritoneum is equally so. Purgatives then would be almost as dangerous as emetics in this disease.

Pressure did not cause pain except it was violent; it was supported with more difficulty when it was made laterally, directed towards the centre. This is one of the best signs for discovering obscure peritonitis. However, it is not surprising that it required a somewhat forcible pressure to cause pain in a patient whose muscles and cellular tissue were very thick, and in whom no meteorism existed. I am persuaded that the development of gas, by distending the painful parts and diminishing the volume of the integuments, greatly concurs in rendering the abdomen sensible to pressure, and even gives intensity to the fever, provided,

however, that the patient is endowed with a firm tissue little disposed to yield; for if it be flabby and already weakened by an anterior affection, the distention may be excessive without fever or pain resulting from it, even in a recent peritonitis, of which I will soon give an example.

The absence of fever in a robust and sanguineous patient does not appear to me to be readily explained. This fact should be noted till we possess a sufficient number of similar cases to draw conclusions from a comparison of them. It proves, however, that an acute phlegmasia of the serous membrane may exist in its highest degree, and with much pain, without the circulatory action being accelerated in the large vessels. It rather appeared to be retarded at the commencement. The pulsations of the heart were not rapid until near the close of the disease. Was it the excess of pain which had made them slower!

Except the purgative, all I did was perfectly right; but we have still to lament that the voice of suffering nature had not been properly interpreted at the commencement of the disease, and that the patient lost so much precious time in ridiculous and injurious practices. It was because the disease had not assumed at first those characters by which every body would have recognized it as an inflammation; which proves that all the forms of inflammation are not known.*

I place among the acute peritonites, but as a very rare variety, an irritation of this membrane which produced an effusion of pure blood, for the following reasons: 1st, these two affections manifest themselves during life by similar symptoms; 2d, the alteration of the tissue of the membrane, when it exists, is absolutely the same in the serous hæmorrhage as in the phlogosis; 3d, the remedies, if there are any, are not different in the two cases; 4th, the causes and the mechanism have here the greatest relation, as I have shown in speaking of hæmorrhagies of the mucous tissue of the abdomen and of those of the mucous and serous tissues of the thorax; 5th, because I do not know of any classification which is better as regards the treatment.

* A conclusion which justifies all I have since said, to attract the attention of practitioners, and to force them to return to the theories they have adopted from the classic authors.

CASE XLII.—*Acute hæmorrhagic peritonitis*.—A flying artilleryman, aged twenty-eight years, tall, muscular, having the vivacity of colour and other attributes of the sanguine temperament, a great eater, obliged even to have food always near him, subject to inflammatory affections of the chest, affected a few months since with some slight attacks of hæmoptysis, his respiration habitually laborious, which rendered quick walking or the ascent of stairs very fatiguing to him, experienced on the 13th of September, 1806, a little uneasiness and lassitude, and took to his bed on the 15th. He had a presentiment of a serious illness with a slight febrile action. The surgeon of the place who was consulted, (it was at a country-house near Udine,) declared that the patient had the *country fever*, and ordered on the 16th, an emetic, during the operation of which there arose a violent pain in the side, deeply situated in the left hypochondrium, beneath the false ribs. Active fever also was developed.

The 17th, a purgative was administered to him. The 18th, there was a calm, and the patient was brought to Udine. On the evening of his arrival he was seen by a physician, who finding him in a state of depression, the face altered, the lips violet, complaining of vertigo, experiencing tremblings and even convulsive movements, the pulse small, much debility and dejection, thought he had to deal with a *spasmodic affection*, and consequently prescribed antispasmodic draughts and a light and vegetable diet. The 19th, deceptive calm in the state of debility, uneasiness and chill.

The 20th, during the greater part of the day, continuation of the calm, no decided pains, he passed several hours in his room out of bed, but tottered when he walked. In the evening violent fever, horrible uneasiness from the exacerbation of the pain in the side, which extended over the whole abdomen; respiration laborious, short, convulsive, universal trembling, cold sweats, chilliness of the extremities, loss of the intellectual faculties. He was carried to the military hospital No. 2, of Udine, where he expired an hour afterwards in a convulsed state.

AUTOPSY.—*Head*. Natural. *Thorax*. Well-organized, solid, and general adhesions; the two lungs were crepitant, their parenchyma very healthy, and exactly filling the cavity. *Heart*. In a good state. *Abdomen*. The peritoneum filled with coagulated

blood; the clots forming a layer over all the viscera; the greatest quantity in the vicinity of the spleen, which was itself much gorged with blood. The cellular tissue, where the gastro-splenic vessels pass, filled with blood. In examining attentively the state of the parts, the post-peritoneal tissues, and those which are comprised between the duplicatures of the membrane were found black and bathed in blood; the tissues where this ecchymosis was greatest, after the gastro-splenic, were those which surround the cœcum, those which envelope the right and left colon, then the transverse meso-colon, afterwards the epiploïc appendages of this intestine, and lastly the mesentery. The tissue which surrounds the hepatic vessels from being very dense contained no blood. That of the gastro-hepatic epiploon very little. That by which the peritoneum adheres to the diaphragm was somewhat black even over the liver. That which unites the pleura with this muscular partition was injected but did not appear to be ecchymosed. The peritoneum a little thickened and readily developed, but every where smooth. When after having been wiped it was pressed between the fingers, a very fine sanguinolent dew could be expressed from it.

Observations.—If the causes of this disease be sought for, the general predisposing ones will be found in the temperament and mode of life of the subject. It has been seen that he was constitutionally liable to hæmorrhagies or to inflammations; for at certain epochs he was indifferently attacked with one or the other. He had no sooner repaired the losses resulting either from the last hæmorrhage or inflammation, than a fresh inflammatory *molimen* was meditated by nature. Some time before his last disease, he experienced two attacks of hæmoptysis, but they were sufficiently abundant to satisfy the want of a sanguine evacuation by the economy. It now remains to explain why the effort directed itself for the first time on the peritoneum, instead of continuing to act on the tissue of the lungs which was its habitual seat.

The pulmonary capillary tissue was developed and endowed with an increase of irritability which caused the blood to remain longer there than was requisite for the maintenance of a due harmony. The intimate and general adhesions which existed are a proof of this development, and of the too long continuance of the sanguineous mass in this part, as they indicate that the paren-

chyma was swelled to such a degree as no longer to permit any gliding between the pleural surfaces. We see the same effects result from the extraordinary swelling of the abdomen in encysted dropsies, &c.

If the pulmonary capillaries, so disposed to become the seat of the inflammatory or hæmorrhagic effort, nevertheless did not become so, have we not reason to suspect that some irritation acting on the abdominal serous membrane, decided the inflammatory diathesis to concentrate itself in its tissue. But we are unacquainted with any thing which acted immediately on the peritoneum, if it was not the emetic which was administered in the country. But was an emetic capable of acting as the exciting cause of the peritonitis? Were not the pressure of the abdominal muscles, the friction which took place between the free surfaces of the serous membrane, the stretching which the forcible contractions and the displacement of the stomach exercised on the gastro-splenic tissue, and that of the epiploon, sufficient to concentrate the general irritation of the arterial system on the peritoneum, and to cause an effusion of blood and serum on its exhalant surface? Do not be too sure of this yet, but recall to mind that Bonne had also experienced pain in the abdomen for the first time during the efforts of vomiting. We shall also see that patients often refer the origin of their peritonites to an emetic.

Whatever was the cause of the irritation of the sanguineous capillaries of the peritoneum, the blood which these vessels abundantly poured out, became as respected the membrane, a stimulus well calculated to increase the pain; hence the sanguineous peritonites are always the most painful. I have seen several examples of them, and the cutting pains and anxiety always existed in the highest possible degree.

A woman who was in the hospital de la Charité, in one of the wards of the celebrated Professor Corvisart, experienced uneasiness and pain in the loins from the time of a miscarriage. On the nineteenth day she was seized with very painful bearing-down pains in the abdomen, an inexpressible agony and sensation of tearing that forced her to throw herself about and utter cries. After from twelve to eighteen hours of this horrible state, she expired in convulsions. The autopsy showed the peritoneum filled with blood, all the viscera covered with a solid layer of cruor. Nevertheless, the most scrupulous examination could not

discover the slightest solution of continuity in the peritoneal surface.

A man affected with a typhus with delirium, and who had not shown any abdominal symptom, threw himself out of one of the windows of the military hospital of Udine. He lived twenty-four hours after this, testifying that at intervals he experienced the most excruciating pains in the abdomen. He died in the delirium after having been affected with a convulsive trembling and coldness of the extremities. The autopsy gave the same result as that of the flying artilleryman just detailed.

Active hæmorrhagies of the serous membranes are then accompanied with very violent pains. We have observed the contrary in the hæmorrhagies of the mucous tissue; we have even said on this point, that it appeared to us, that a surface which actually pours out blood could not be in a state of great suffering, because pain arrests the sanguine excretion. Is this idea a mere vain conjecture? I think not, and I believe that the facts I have just reported, are not in contradiction with those which have reference to hæmorrhages of the mucous membranes.

It may have been remarked in the case of the artilleryman, that the paroxysms of pain had intermissions. The other patients I have cited also presented them. I believe then that in these cases, the hæmorrhagic irritation begins to excrete the blood, and that the accumulation of this fluid causes the pain of the serous surface; which supposes that this serous surface had become more sensible by the hæmorrhagic modification, which is only a form of inflammation. When this cause begins to be very powerful, the sufferings and anxiety are soon at their height, but finally, the sensibility from being exalted is weakened; if the patient does not die, he ceases to suffer, or at least he only feels obscure pains, during which the sanguineous exhalation reëstablishes itself. After a shorter or longer abatement, the sufferings recur as at first, and these alternations return till life terminates, which generally takes place after a violent exacerbation.

As to the state of the pulse, it corresponds to the degree of plethora and that of the pain. Strong and inflammatory during the first period, if the hæmorrhage occurs promptly, it contracts and becomes rare and convulsive in the first paroxysm of pain; it afterwards expands during the calm, but the continued flow of blood soon renders it rare and gaseous. Finally, it appears

quick, accelerated, and small, in the convulsive crises which precede death.

On the other hand, we have said above, that the accumulation of blood in the digestive cavity occasioned symptoms of irritation wholly different from those which belong to the pure and simple sanguine effusion. Nature therefore acts in the serous hæmorrhagies as in the mucous; this at least appears to me as most probable; till I see a peritonitis or a pleurisy with discharge of blood, attended by continued pain, as takes place in those peritonites and pleurisies which terminate by a membranous exudation, I still allude only to the acute stage of peritonitis. The chronic manifests other phenomena, which we shall presently investigate.

If we recall to mind the determining causes of these hæmorrhagies of the peritoneum, which we have seen up to the present moment, we find that they were contusions, or commotions and emetics. Whilst waiting till new facts present themselves, we may still lay it down as a principle, that contusions, pressure, and too violent frictions of the exhalant surfaces may induce a morbid action in the peritoneal tissue, which is dangerous in proportion to the irritability and disposition to inflammation of the subject.

But do we not find analogous facts in the peritonites of females recently delivered? 1st. Exalted sensibility, extreme mobility of the vascular system, disposition to a more or less impetuous localization of the organic actions for the secretion of a fluid, universal plethora: such is the general predisposition which exposes every lying-in woman to a more or less violent inflammatory concentration, if the organic actions are not directed to the secretory vessels of the milk and perspiration. Above all, the localization cannot take place without menacing the tissue of the place with a fatal disorganization. The skin itself, which appears least subject to it, often experiences an erysipelatous or miliaary phlogosis, when the vascular apparatus expels the superfluous fluids through its tissue. If then the efforts were directed on the peritoneum, it would be difficult for it to resist. But let us examine in what state it would be found.

2d. Considerable distention and displacement of this membrane, to accommodate itself to the development of the uterus. Compression, reiterated frictions of the different viscera of the

abdominal cavity during gestation, and especially during the efforts of child-birth: such is the local predisposition which causes the organic actions as well as the fluids to be readily directed to the peritoneal tissue from a chill, a fit of anger, or even without any other determining cause than the augmented susceptibility of the serous membrane.

Let us be content with these comparisons of the cause and mechanism of peritonitis, until we are better supplied with facts, and let us continue the exposition of those we have witnessed.

Hitherto we have examined peritonitis in its highest degree of violence and its shortest duration; let us now view it in a less marked grade, still acute, but without pain; let us afterwards seek for the reason of this difference.

CASE XLIII.—*Acute peritonitis following a chronic pleurisy.*—Malgras, aged twenty-two years, soldier in the ninety-second regiment, dark complexion, lean, well-formed, and enjoying good health, being employed on the works at Palma Nuova, about the end of March, 1817, drank whilst very warm a great quantity of cold water. He was instantly attacked with a pain in the side below the left breast, and diarrhœa. He passed twenty-eight days in the hospital of that place, where he was treated by pectoral drinks and pills of opium and ipecacuanha. The pain in the side gradually diminished; the diarrhœa completely disappeared, but the patient not regaining his strength could not leave the hospital. Finally, he was transferred to that of Udine.

During the twenty-seven first days, I observed nothing except a frequency of the pulse, which was hard and strong, with heat of skin increasing in the night. At the time of the morning visit, the fever was active, the patient being heated by his bed. He passed the day up, and on the evening visit, the frequency of pulse and heat appeared much less. He had a very good appetite. He did not complain of any thing except of not regaining his strength, which he attributed to the nocturnal exacerbations, which he thought were paroxysms of intermittent fever. He was not much emaciated. His face was a little pale, but the cheeks were red during the exacerbations.

My reiterated questions as to the state of the different apparatuses, discovered to me nothing except some paroxysms of

nocturnal cough, and transient remains of the old pain in the side; I did not think that there was any foundation for a belief that there was disorganization in the thorax, and I determined to try bark in substance against this kind of remittent, especially as the patient had sometimes experienced chills.

He had scarcely taken a few drachms of this medicine, when the febrile action increased in a remarkable manner, and the heat became constant. This trial sufficed to convince me that the fever was hectic, and, in waiting till I could discover the focus which kept it up, I determined to subject the patient to a severe regimen, and to treat him by demulcents.

I followed this new plan for eight days, and congratulated myself in contemplating the diminution of the fever and the augmentation of the strength, when, on the 28th of July, about the fifty-eighth day, counting from the appearance of the pain in the side, the twenty-seventh from the admission of the patient, the whole abdomen suddenly became tympanitic, without any apparent cause, and without any pain.

The next day, in the morning, the abdomen had considerably augmented; in the evening it was enormous, and yet there was no sensation of pain. The functions of the stomach were uninjured, those of the bladder began to be deranged; he had much difficulty in urinating. The pulse, less frequent than before, was small and contracted. The physiognomy was not altered; but the deep red colour I had always remarked on the cheeks was rather deeper. I expected a fatal issue. I contented myself with ethereal and alcoholic fomentations, and antispasmodic and carminative potions.

The 31st of July, the fourth day, I found the meteorism arisen to such a height that the integuments of the abdomen were almost transparent and the skin ready to burst. Pulse rapid, features altered, appearances of speedy death. Nevertheless, pressure on the abdomen was but little painful. The patient began to experience uneasiness and an anxiety that led him to apprehend death, but he had no acute pain. For three days past he had had neither vomiting nor alvine evacuations, and there had been but a scanty flow of urine. He expired tolerably tranquilly about midday.

AUTOPSY.—Habitude. Slight infiltration of the inferior extremities. (It had taken place since the last change.) Second degree of marasmus. *Head* natural. *Thorax.* A vast abscess

filled with white, consistent, inodorous pus, in the left cavity. It was situated posteriorly and very deep, having for its parietes inferiorly the diaphragm on which the purulent matter rested; exteriorly and anteriorly the lobe of the lungs which adhered strongly to the sides; interiorly the mediastinum. Thus the pus had made itself a cavity situated deeper between the lung, the mediastinum, the heart and the stomach, almost in the middle of the thoracic cavity; a spot where percussion would never have discovered it, since what remained of the parenchyma between the fluid and the integuments was crepitant, and would have returned the ordinary sound of the chest in three-fourths of its circumference. The thickness of the dorsal muscles also prevented a proper judgment being formed from the posterior part. The whole circumference of this abscess was lined with a white layer under which the serous membrane was seen thickened and phlogosed. The right lobe and the heart were healthy. *Abdomen.* The peritoneum, opaque, reddish, and every where covered with a white exudation which concreted the intestines into a large mass. This exudation although soft was already fibrous and of an organized appearance; milky serosity in the pelvis. The mucous membrane was healthy throughout the alimentary canal, except in the cœcum, where it appeared somewhat red, as also in some scattered points in the small intestines; as these were at the curvatures, I judged that this redness arose from the enormous distention which these organs had undergone; the fecal matters were solid and inodorous; the gas which caused distention equally without odour.*

Observations.—This case which may also serve for the history of pleurisy, furnishes us with new reasons to think that the chronic inflammation of a tissue exposes other analogous tissues to become equally inflamed, although they belong to different apparatuses. In catarrh and peripneumony we have often seen the irritation transmitted to the gastric or intestinal mucous mem-

* I suspect a very narrow perforation of the ileum in this patient, which I overlooked. Too small to give vent to the stercoral matters, it only permitted the passage of gas, whose impression determined the peritonitis. Several analogous facts have inclined me to this opinion. These perforations are produced by ulcers of the mucous membrane, resulting from the prolongation of the enteritis. It was thus that one of the pupils at St. Cyr died, whose case will appear in the "*Annals of Physiological Medicine.*"

brane. Gastritis has often induced cough, and even violent pectoral catarrhs. I have frequently met with signs of irritation in the bladder during gastric or dysenteric epidemics. We here observe that the pleurisy preceded the peritonitis for a long time, and we cannot assign any other cause for this latter phlogosis than the existence of the former.*

The obscurity of the pleuritic symptoms merits the greatest attention. It will be recognised that this frequency of pulse and this disguise of remittent fever which struck me were only kept up by this focus of irritation; the little progress the marasmus made is explained by the pus not being depraved, and by the good state of the pulmonary parenchyma. Nevertheless, the febrile reaction of two months by exhausting the forces and relaxing the fibres, rendered the patient susceptible of experiencing an acute inflammation of the peritoneum, with an enormous distention of the phlogosed parts without feeling pain. It is thus that we have seen gastritis and enteritis arise and make a continued progress without occasioning any suffering, when they occurred in individuals weakened by another disease; but as we have equally remarked that these latter phlogoses are sometimes accompanied with violent pains, we ought to presume that every person weakened by a disease will not be as insensible as Malgras to the occurrence of a peritonitis; this we can demonstrate by a case, in following the history of this phlegmasia towards the chronic state.

CASE XLIV.—*Chronic peritonitis become acute.*—Hubert Maigrot, a soldier in the ninety-second regiment, aged twenty-six years, dark complexion, large and well developed thorax, and moderately muscular, presenting externally what is termed the bilious temperament, was seized with intermittent fever on the 16th of November, 1807; it lasted four months. Having afterwards joined his corps, he was attacked towards the end of March, after having been jolted on a cart, with a pain in the left side of the chest, reaching to the shoulder. This pain increased so much that he was obliged to confine himself to his bed. He also had cough, but not to any extent, and without any expectoration. The pain extended and occupied all the left side of the trunk from the shoulder to the hip. It diminished in violence at

* See the preceding note.

the same time, and Maigrot was again able to walk and perform his duty. He remained in this state during the whole month of April. The 4th of May the pain increased; a febrile action supervened, and on the 9th of the same month the patient was brought to the hospital of Udine.

Such was the information given to me by this soldier as to the origin of his disease; I observed nothing but a sensibility to the touch in the left hypochondrium and under the false ribs, with a febrile action marked by a little frequency of pulse and a continual disposition to chill. Emollients, as well internally as externally, had so astonishing an effect, that the patient asked me for food on the third day after his admission, saying that he was in the same state as he had been for a long time previous to the relapse of the 4th of May. Being myself of opinion that this disease was of a chronic rheumatic character, I did not think it right to harass this soldier by a rigid diet; he eat a half and a quarter ration.

During the night of the 17th and 18th, the abdomen became painful, sensible to the touch, and the patient no longer complained of the extensive pain in the side. With this new symptom there arose nausea, and Maigrot having drank much tisane, vomited violently, which recurred from midnight until the visit of the morning, when I prescribed mucilaginous and oily anodyne juleps, enemata, and emollient fomentations. The vomiting became less frequent.

The 19th it was checked, but the slightest pressure upon the abdomen was insupportable. It felt hard, renitent, and in the left flank a spot more painful than the rest was discovered; he had want of appetite, thirst, dry tongue, lengthened features, small, active, and frequent pulse. Content with having removed the first erethism by laudanum, I restrained myself to the use of demulcents administered in every way, and to leeches, which I had applied over the suffering part.

The 24th, the twentieth day of the exasperation of the pains in the side, the fifth of their extension throughout the abdomen, with development of fever, the patient declared himself somewhat better. From the commencement he always had the same sufferings, but in a less degree; he was generally asleep, his eyes half closed, but no stupor nor delirium; on waking him, it was found that he enjoyed his reason perfectly. Nevertheless, the counte-

nance began to alter, and the pulse always rapid, lost its consistence. The patient generally went to the close stool two or three times every day, and occasionally vomited when he drank more than common. The skin was flexible and the mouth moist.—Emollients, but aromatized, and some doses of wine, for the patient grew weaker.

The 26th, livid hue, diminution of the frequency of the pulse, and of the elasticity of the artery, air of depression and suffering, but without contortion, abdomen less renitent, supporting pressure much better, frequent stools, which were now from fifteen to twenty.—Tonics.

The 29th, diminution of the stools, meteorism, augmented renitence; abdomen painful, agitation. The pulse is not more frequent. No change in the state of the cerebral functions.

The 31st, augmented sufferings, continual vomiting, but pressure is better supported. The pulse and heat decline. Diarrhœa persists.

The 1st of June, twenty-sixth day of the last exasperation of the pains, the stomach instantly rejects every thing presented to it, gradual chilliness of the extremities and loss of the moral faculties. He died towards evening.

AUTOPSY.—*Habitude.* Body much emaciated, though still fleshy; muscular system but little paler than usual. *Head.* A little serosity in the arachnoid. *Thorax.* Every thing natural, except a small point of the sharp edge of the left lobe, which was somewhat indurated. *Abdomen.* Peritoneum covered with an albumino-fibrinous exudation, of a red or grayish colour, organized like the concretions found in aneurismal hearts. Its colour was gray in certain points, and red in others, accordingly as the concremented matter contained more or less red colouring matter. This exudation, which between the intestines was two or three inches in thickness, lined and cemented together all the folds of the serous membrane, which was seen beneath, thickened, red, and even black in certain places. In all those where the peritoneum adheres to the surrounding parts by a lax tissue, as in the omentum, the mesentery, &c. large ecchymoses were perceived beneath this membrane, indicating the infiltration of a sero-sanguinolent lymph into the cells of this same tissue. There was also much reddish serosity in the cavity. The mucous membrane was found perfectly healthy throughout the digestive canal.

Observations.—The account given by the patient attributes

the jolting of a cart, as the determining cause of the pain in the side. But was this pain, which, after having been violent, limited itself for more than a month to a tolerably obtuse painful sensation, dependent on an irritation of the peritoneum? I do not believe that it appertained to the pleura,* because, after the exasperation during which the painful stitch corresponded to the hypochondrium, this pain resumed its first character, affecting the whole of one side from the shoulder to the pelvis. It does appear to me to have been rheumatic; nothing proves that it had its seat precisely in the tissue of the muscles. I regard it as the expression of an irritation at first fixed in that portion of the peritoneum which embraces the spleen, a spot where peritonites generally arise, when they originate from contusions or efforts. The general pain of the left side of the trunk was then, I think, only a modification of perception, which owed its first origin to the divergent expansion of the nervous cords arising from the semilunar ganglion. The regimen and repose retarded the progress of the peritonitis. But when it finally extended itself to all the duplicatures of the serous membrane, it resumed that acute form which overwhelmed the functions and conducted the patient to the tomb.

The albumino-fibrinous exudation, tinged of a red colour in several places, as well as the jolting, and the origin of the pain, in the left hypochondrium, recall to mind the hæmorrhagic peritonites of which we have treated. Let us add to these analogies that resulting from the ecchymosed state in which the post-peritoneal tissues were found, and we shall have quite enough to conclude that the peritonitis of Maigrot was provoked by an immediate irritation of the peritoneum.

The general predisposition may be attributed to the influence of the intermittent fever, which had left the subject weak and irritable. But may it not be possible that it contributed to the peritonitis in another way? We will touch on this question after having reported some chronic peritonites, in the production of which this disease appears to have had some part.

The case of Maigrot proves that the pain of the peritoneum, which usually arrests the vermicular contractions of the intestines, may sometimes increase them and produce diarrhœa, as it produces vomiting. Nevertheless, this is of rare occurrence. I have

* It may have depended on the induration of the thin edge of the left lung.

never observed it in the commencement of acute peritonitis whilst the pains were very acute. But that of Maigrot was already somewhat chronic. The somnolency and depression in which he was always found, indicate a universal relaxation, far removed from that violent erethism which coincides with constipation in the recent peritonites which attack vigorous subjects.

In the following case, where the peritonitis was much more painful, although chronic, the constipation persisted. The circumstances of its development also render this disease very interesting.

CASE XLV.—*Chronic peritonitis followed by consecutive pleurisy.*—A young soldier, twenty-two years of age, entered the military hospital of Nimeguen, for an abscess in one of his testicles. Some time after his arrival he experienced some symptoms of gastric obstruction, which determined the surgeon-major to give him an emetic. During the effect of this remedy he felt pains in the abdomen. They persisted, and could not be alleviated. Vomiting, difficulty of urinating, and fever having also appeared, he was sent to the medical wards, where I found him when I took charge of them the 12th Germinal, an. XIII. The pains in the abdomen had already lasted two months.

I observed emaciation, paleness, and cough which was much ulterior to the pains in the abdomen, but without expectoration. Abdomen tense, meteorized, painful to the touch. The patient felt continual cutting pains there; vomiting of almost all aliment, especially in the evening. Augmentation of pains and uneasiness as soon as the patient had taken any thing irritating. Difficulty of urinating. Pulse frequent, active, and contracted, accelerated in the evening, with burning heat and increase of pain.

Having recognised the disease and judged it to be incurable, I limited my prescriptions to demulcent drinks combined with opium. The susceptibility of the stomach interdicted me from all other medicaments.

The 28th Germinal the disease had progressed, the hectic fever had always been high, the heat acrid and ardent. The marasmus had made great advances. The patient vomited every thing without exception, suffered from agonizing and continued pains in the abdomen, never slept, scarcely ever had an alvine evacuation, urinated little and with much pain, was depressed, even in despair,

and expected death with impatience. During the night he passed from this violent state into a fatal syncope.

AUTOPSY.—*Habitude.* Considerable marasmus without œdema. *Thorax.* Recent gelatinous adhesions between the pleural surfaces, especially at the base of the lungs. The parenchyma natural. *Abdomen.* The cavity contained an abundance of a whitish fluid resembling turbid whey. The peritoneum was red, granular, and so thickened as to be upwards of four lines in diameter in some places. Its surface was studded with small fragments of a white inorganic exudation, which was for the most part dissolved in the effused matter. This disposition, which was universal throughout the peritoneum, was, however, more considerable over the omentum, mesentery, intestines, stomach, and bladder. The liver was voluminous, and on cutting into it presented a mixture of white, yellow and red, giving it the appearance of granite. The white points were tubercles; the rest approached the lardaceous state. The spleen had disappeared; we found in the fold of the peritoneum which should have contained it, nothing but a little inorganic black jelly. The pancreas hard, somewhat scirrhus and blackish internally. The kidneys perfectly natural, but the ureters dilated to the size of the little finger. The mucous membrane of the whole digestive canal was unaltered. That of the bladder was equally healthy, but this viscus was reduced to the smallest possible size.

Observations.—Observe how the intensity of the hectic fever corresponds to the vivacity and persistence of the pains. The subject always lived in a state of inflammatory diathesis after that fatal emetic; he also became emaciated almost as promptly as those who have a hectic from purulent absorption. Was it not from the extreme sensibility of the inflamed peritoneum which did not permit any dilatation in the hollow viscera, that we must explain the vomiting, constipation, deficiency of urine and dilatation of the ureters? Finally, must not the pleurisy be attributed to this inflammatory diathesis, arising from the pain. It has been seen as primitive and the cause of the peritonitis; here it is only the consequence, but continuing to develop the sympathies by analogy of tissue. Another proof of it will be found in the succeeding case, where, however, the irritation was obscure for a long time.

Hitherto we have seen the phlegmasia of the peritoncum mark

the moment of commencement, at least by some acute pains. In tracing it in the chronic state, we shall soon be convinced that it is as capable of germinating and developing itself without disturbing the functions as the phlogosis of the internal membrane of the digestive organs.

CASE XLVI.—*Chronic peritonitis following intermittent fever, becoming acute at its close.*—Nomin, aged twenty-seven years, artilleryman, dark complexion, tall, having formerly been strong and muscular, entered the hospital of Udine, the 23d of January, 1807, in an already advanced stage of marasmus, with pain, renitence, and tumefaction not only of the abdomen, but also of the whole circumference of the thorax; features lengthened, altered, suffering continual cough, thick and white expectoration, bubbling respiration, frequent, active, and somewhat strong pulse. He gave the following account of the origin and progress of his disease.

He had been attacked four months before, with quotidian intermittent fever. After eight days of fever, he became very much swelled; this he attributed to the great quantity of water he had drunk during the paroxysms. He had been treated, at the hospital of Treviso, by the constant use of bitter wine. At the end of two months and three days he was discharged cured. But, fifteen days after his dismissal, he had been seized with a very acute pain in the side, about the region of the spleen, and diarrhœa.

On his arrival, he had reached the eleventh day from this last symptom, and after this period his strength and *embonpoint* were exhausted with surprising rapidity. The fever, which had not left him during this interval; was the cause of the emaciation in which he was. It had always been accompanied by cough. Nomin died, the 26th of January, without having been alleviated by any remedy.

AUTOPSY.—*Habitude.* Semi-marasmus, no infiltration. *Thorax.* Both pleuras red, slightly adherent by a white inorganic exudation; about a pound of white serosity in the left cavity. Both parenchymata healthy. *Abdomen.* Peritoneum somewhat thickened and every where coated by the same albumino-gelatinous whitish exudation seen on the serous membrane of the thorax. The whole of the abdominal viscera without exception were covered with it. It caused a slight adhesion of them together

No effused fluid. The liver was somewhat brown for an inch in depth over its whole periphery; the stomach not contracted, presented a slight redness on its mucous membrane; that of the small intestines was also red in isolated patches; that of the cœcum and colon presented the same alteration; no ulcers were discoverable in it.

Observations.—The ascites with which this man was attacked during the continuance of his intermittent fever marks the first moment of the irritation of the peritoneum; this irritation gradually increased till it assumed the form of acute inflammation. This progression is not rare, but how is it to be explained? Is it the development of the forces destined for exhalation now converted into inflammation, or rather the presence of the fluid which induces this phenomenon? Both have their probabilities. If the skin be covered with pustules and boils, when it is forced to secrete more than it was accustomed to do, which is very common in excessively hot weather, is it surprising that the peritoneum, which should only exhale a thin and gaseous fluid, becomes phlogosed and disorganized when it is obliged from a continued excitement to give passage to a much more dense matter! Every organ which is subjected to too violent an action, to which it was not destined, must become altered more readily than that which only executes its functions, although it performs them with greater activity than it ought. On the other hand, is it not possible that the suddenly effused serosity contains irritating principles, or that it becomes so altered as to be a very dangerous stimulant to the peritoneal surface?

Was it really the great quantity of water drank during the paroxysms which caused the ascites? It is very possible, that instead of being directed towards the kidneys, &c. the water which had been absorbed may have been poured out by the exhalants of the peritoneum. But there must be a cause for this localization. It would be an exaggerated pretension to hope to find one for all that occur in diseases, but to neglect circumstances which might furnish an explanation of a phenomenon, is to be culpable, if this explanation can suggest the means of diminishing the danger. I believe that this reasoning is applicable to the case under consideration.

During the period of the chill in intermittents, when the fluids are accumulated in the capillaries of the viscera, do not the con-

vulsive shocks of the abdominal muscles occasion a friction which is sometimes very great between the different peritoneal surfaces? Can we be certain that these shocks are not capable of establishing a point of irritation in those spots in the abdomen where the swelling and erection of the capillaries are the greatest: such is the region of the spleen? Do we not know that this viscus sometimes swells prodigiously in fever patients? But if the afflux of blood into its parenchyma takes place too impetuously during a violent chill; if the spleen be forced to swell suddenly, and at the same time it be pressed and shaken by the convulsive movements of the abdominal muscles, I ask every physiologist, may not a sensibility, a point of irritation result, which fomented for a length of time by the repetition of the paroxysms, may finally extend through all the duplicatures of the membrane?

It appears to me that this mechanism is very natural, but whether it be adopted or disputed, it is not less true that I have frequently seen peritonitis arise during intermittent fever, that the pain almost always commenced in the left hypochondrium, and that this is more particularly to be observed in cold and humid countries, where intermittents are attended with stronger and longer chills than in warm climates. If I had attended to the functions of the spleen, I might perhaps give more appearance of truth to this assertion. *

* The spleen is subject to a multitude of variations, which correspond to the rapidity with which the blood traverses the mesenteric artery and the intestines. All the causes which accelerate the circulation in the abdomen may therefore alter its structure. This viscus appears to be the goal of all efforts, and when all the abdominal viscera are at the same time pressed, the blood accumulates in its tissue as the least resisting point. Too suddenly swelled in a paroxysm of fever, the spleen may then also experience a morbid alteration, as well as when rapid running, a violent effort, or forcible compression have caused its sudden enlargement. A rapid disorganization does not always result from this; but a point of irritation remains which becomes the source of a chronic disease which is often incurable. I have found the spleen divided into two portions, one of which was free and floating in sanies contained in a cyst, and the other firmly attached to the stomach was as large as the liver. The peritoneum was phlogosed in every part, but it was easy to judge that the inflammation had for a long time been confined to the spleen. The patient owed this frightful disorganization to a fall which he had experienced from a staircase, with a bag of grain which he was carrying, two years previously to his death. From that moment he had never ceased to suffer in the region of the liver, and had always felt a swelling there which insensibly increased. In general I have always heard those soldiers who came to the hospital on account of

The mucous membrane of the digestive canal slightly partook of the irritation; a symptom corresponded to this lesion, viz. the diarrhœa which supervened with the last exasperation of the peritonitis. Thus all these disorders had their external signs, viz. pain for this latter affection, diarrhœa for the phlogosis of the mucous membrane. Nevertheless, as we have seen the diarrhœa in Margot, in whom the mucous membrane was healthy, let us not be hasty in our conclusions; let us be content with remarking that the irritation of this membrane coïncides, in Nomin, with the prolonged use of aperitives, febrifuges, and stimulants of all kinds.

The peritonitis I am about to detail is of a grade somewhat more chronic; its origin is also more obscure than that of the preceding; its progress was nearly the same, but additional data will be afforded by it respecting the complication of the irritation of the mucous membrane with that of the serous.

CASE XLVII.—*Chronic peritonitis with phlogosis of the mucous membrane of the digestive canal.*—Troussot, aged thirty years, fusileer in the ninety-second regiment, chestnut-coloured hair, slender, medium height, was brought to the military hospital of Udine the 10th of October, 1806, with his abdomen swelled, painful, and fluctuating. Questioned as to the origin of his disease, he stated, the next day, that he had been attacked eighty-three days previously with an acute fever which had lasted three days, that it had been followed by diarrhœa, ascites and general dropsy; that nevertheless he had not suffered much in the abdomen.

He had remained twenty-three days in the hospital for this disease, but not in my wards. He had been treated with an emetic and purgatives, and had been dismissed, still retaining a slight diarrhœa of two evacuations *per diem*.

Two months passed thus during which he was unfit for duty. Ten days before his admission, the diarrhœa had greatly increased, but, at the end of four days, the abdomen having suddenly swelled, with constant pains, this evacuation had been suppressed, and had given place to a constipation which still existed.

I observed emaciation and even commencement of marasmus, falls or exertions which acted on the abdomen, complain of the left hypochondrium. But oftentimes the alteration of the spleen does not implicate the whole of the peritoneum.

a dull sordid complexion, mixed with red; abdomen tense, renitent, fluctuating, somewhat painful when pressed on in the middle, very much so when either flank was depressed towards the centre. Frequency of pulse without heat. At the time of his arrival hiccough existed; it was suspended by an etherized antispasmodic potion, but it returned the next day with occasional vomitings.

After having recognised chronic peritonitis, and drawn a fatal prognosis, I prescribed antispasmodics, anodynes, and emollient drinks to serve as a vehicle and to alternate with them, and emollient fomentations on the abdomen.

The 13th of October, the eighth day of the exacerbation of the pain in the abdomen, the hiccough was constant, the patient vomited every thing he swallowed. Obligated to give him nothing but lemonade or the solution of gum arabic. Pulse small, face hippocratic.

The 14th, extreme debility; comforting potion. Death without a struggle.

AUTOPSY.—*Habitude.* Two-thirds marasmus. No infiltration. Abdomen depressed. *Head.* Sanguine injection; the ventricles somewhat dilated by a limpid serosity. *Thorax.* Almost general adhesions of a reddish colour, and half changed into a tissue analogous to that of the membrane. No effusion. Parenchymata crepitant, diminished by the elevation of the abdominal viscera. *Heart* healthy. *Abdomen.* The cavity contained a white glutinous liquid, in which many flakes of a caseous appearance were floating; this fluid was inodorous. Peritoneum covered with a white caseiform layer, analogous to the flakes; its proper tissue black, two lines thick, rugose, presenting small white eminences on its surface, which were so many small masses of tubercular matter, covered by a transparent membrane. The membrane, when dissected, was reduced to black cellular layers, without any appearance of vessels. All the viscera, and especially the intestines were cemented together by the caseiform exudation, so that the fluid could not penetrate between them. The tissue which unites the peritoneum to the abdominal muscles was lardaceous and four lines in thickness. The muscular membrane of the intestines thickened and easily detached. The mucous membrane equally developed and a little fungous, slightly red in the small intestines, much injected, and manifestly phlogosed in the cœcum and colon, but not

in the rectum. In the stomach the membrane was equally thickened and coloured, but moreover lined by a coat of mucus. The omentums tough and lardaceous, from the degeneration of their serous membrane and cellular tissue; the larger, reduced to a narrow band, situated along the great curvature of the stomach, was scarcely recognisable. The mesentery, equally disorganized, presented scirrhus and tubercular glands. The mucous membrane of the bladder healthy.

Observations.—Whether the fever of three days which appeared at the commencement of this disease, was the signal of the invasion of the peritonitis, whether it depended on a saburral or some other gastric affection, and the ascites was but the product of an obscure irritation, like that observed in the preceding subject, it is evident that, for a long time, the symptoms of irritation of the mucous membrane predominated. It is impossible not to admit that the tonic and aperitive-treatment may have contributed to perpetuate it. We are again sorry to see an emetic administered in an abdominal affection, when the peritoneum was the seat of a latent phlogosis.

Remark the different effects of the two phlogoses, that of the mucous membrane disorganized nothing, at least it did not produce any ulcer, and we have said elsewhere that redness was not a proof of disorganization.* That of the peritoneum, although still more obscure, profoundly altered the texture and disposition of the whole of the cellular and serous tissue of the abdominal cavity. Whilst it was but slightly painful, the diarrhœa always lasted. As soon as it acquired the acute character, the peristaltic action was checked and even reversed. The simultaneous progress of the two phlogoses is still better seen in the following case.

CASE XLVIII.—*Chronic peritonitis complicated with chronic enteritis.*—Pierrot, aged twenty-two years, chestnut-coloured hair, slender, white skin, flabby flesh, fusileer in the ninety-fourth regiment of the line, experienced, the 13th of July, 1806, a swelling in the abdomen, followed by flatulence, colics, and diarrhœa. The pains in the abdomen, always accompanied with a sensation of swelling, lasted for a month before this soldier could

* No, but it is a proof of irritation.

resolve to ask to be sent to the hospital. But, finally, his strength declining, his stools becoming still more frequent, so as to force him to go to the water-closet thirty times a day, Pierrot entered the hospital of Udine. He there took ipecacuanha, which suspended the diarrhœa, and left the hospital the next day; but the very day of his dismissal it recommenced.

He was sent to work on the fortifications of Palma Nuova; but the stools became so frequent and painful that he was, at the end of eight or ten days, brought back to the hospital and placed in my wards.

I observed frequency of pulse, heat, frequent stools with tenesmus, obscure and constant pains in the abdomen, with a certain swelling, sensibility on pressure in the region of the ascending colon. He said that he experienced pain towards the superior and middle part of the abdomen.

Demulcents, rice water, mucilaginous potions with a little laudanum, and especially a severe regimen composed of gruel only, dissipated the diarrhœa and calmed the febrile heat in thirty days. But, when I wished to augment the nourishment and favour the return of the strength by some tonics, I several times found the pulse becoming quicker, the febrile heat to reappear, the stools to become more numerous and the colics to be unceasing, which led me to conclude that a permanent point of irritation existed in the abdomen, exacting much constancy in the first treatment I had adopted.

I therefore persisted in the demulcent plan, from the 1st of October to the 15th of November, and this interval passed as follows.

When Pierrot took nothing but light, farinaceous food, and demulcent medicaments, no morbid symptoms were discoverable in him, except frequency and hardness of pulse, but not enough to augment the temperature of the skin. He only complained of not regaining his strength. His complexion was pale, inclining to straw colour, his skin arid, his *embonpoint* nearly natural. Notwithstanding this calm, there was a dull pain in the abdomen, when lateral pressure was made on this cavity. The right iliac region was always the seat of a certain uneasiness. He had habitually but one alvine evacuation, though liquid, in the twenty-four hours. It was perceptible that the abdomen was rather more prominent than the *embonpoint* of the patient indicated.

As soon as his food was increased beyond a half allowance, and he was permitted to have meat, he had two or three stools, and even pain in the abdomen and very great heat, with active, hard, and frequent pulse. From the 16th to the 30th of October, chills several times supervened in the evening, causing apprehensions of intermittent fever. But I was convinced of the groundless nature of these fears, by the good effects of diet and demulcent mucilages. Finally, on the 15th of November, the patient, wearied of the hospital, begged so hard for his discharge, that I thought I ought to grant it to him. I exempted him from duty, and he rejoined his corps.

On the 5th of January, 1807, Pierrot reëntered one of my wards in a very advanced state of marasmus, his skin earthy, his abdomen slightly salient and renitent at its centre, as if he had something full and solid behind the abdominal muscles. The pulse was very frequent, but the body was too much emaciated for the heat to be very great. Questioned as to the nature of his pains, he stated that he felt in the abdomen a sensation of turning, and as if a round body was moving upwards towards his throat. He still had diarrhœa.

He informed me that during the fifteen days that he had passed with his corps, his abdomen had constantly become more and more painful, and insensibly became hard; but that the diarrhœa had reappeared only four days before his return into the hospital.

Nothing remained for me to do, but to calm a little his agony, and to relieve him from the horror of his death. Thus I gave cordial wines, a comforting potion with distilled water, tincture of opium, &c. &c. The 12th of the same month, he ceased to suffer and to live.

AUTOPSY.—*Habitude.* The last degree of marasmus. *Thorax.* Extensive and old adhesions of both lobes, which were compressed by the elevation of the diaphragm. Some dry and sparse tubercles around the bronchiæ;* parenchyma crepitant. *Heart,* healthy. *Abdomen.* All the viscera united by the disease of the peritoneum, which membrane is thick, brown, lardaceous, and forming, by the degeneration of the omentum, a thick mass, sprinkled with numerous white points, which are tubercles or tumours filled with white pulpy matter. On the peritoneum

* The effect of their phlegmasia.

covering the intestines, as also that of the liver and stomach, these granules resemble the pustules of small-pox. The mesentery was very thick and lardaceous, and its glands enlarged and tubercular. The peritoneal surfaces were every where adherent one to the other, but by a simple adhesion. Their separation did not leave upon any of them, either fibrous productions or exudation. It is the tissue of the membrane itself which is thickened, degenerated, lardaceous, and tubercular.

The mucous membrane of the stomach is slightly reddened, but only in isolated patches; that of the small intestines little altered; that of the cœcum and colon generally red and having here and there ulcerations of greater or less extent, with loss of substance the whole thickness of the part. The parenchyma of the liver healthy; the spleen contracted, slightly degenerated, and tubercular.

Note.—Upon the diaphragm many glands were found of the size of a pullet's egg, entirely degenerated into tubercular matter.

Observations.—There is no need of entering into any explanation for every one to recognise here the progress of phlogosis of the mucous membrane. It did not differ from what we have seen in those cases where it occurred without complication. We should however remark in passing, that the characteristic sign of this phlegmasia, or the liquid stools, received from the peritoneal phlogosis different modifications, which renders it more or less sensible, and which may be simulated by it.* In summing up the characters we will endeavour to distinguish the primitive diarrhœas from those which are only secondary to the peritonitis.

In this grade of peritonitis, the pain and fever are not exasperated so as to exhibit the passage from the acute to the chronic stage, as in the preceding; but these symptoms constantly exist, although in a very obscure degree. There were always symptoms sufficient to show the existence of an irritation of the serous

* Peritonitis being slightly painful, the irritation of the mucous membrane of the colon provokes the expulsion of the contents of the bowels: there is diarrhœa. If the peritonitis is attended with more pain, there is constipation. I have often observed these alternations, and they have sufficed, when the ordinary renitence of the peritoneum existed, to enable me to recognise the simultaneous existence of inflammation of the mucous and serous membranes of the large intestines.

membrane. In the case which we proceed to relate, the physician had not even this feeble resource upon which to found a diagnostic; he was reduced to the interpretation of a single symptom, one which in the present advanced state of medical knowledge, is very insignificant when existing alone, and which may result from the lesion of some one of the principal apparatuses; I allude to *dropsy*.

CASE XLIX.—*Chronic peritonitis; dropsy*.—Boulard, fusileer of the thirty-fifth regiment, aged about thirty years, dark complexion, large and muscular, sensibility obtuse, having been chilled by the rain at the siege of Ulm, in an. XIII, became suddenly leucophlegmatic. He did not enter any hospital. I do not know what remedies were prescribed for him, but the swelling inconvenienced him so little at first that he continued the winter campaign, in Carinthia and Carniola. It was not until March, 1806, more than four months after the chill which had produced it, that the dropsy compelled him to seek aid at the hospital of Udine.

I noticed in this patient nothing but a general infiltration, and my questions elicited no information that could throw light on the nature of his disease. He did not suffer any particular pain; he had but little uneasiness and dyspnœa, with some spells of coughing at night; but these might be attributed to the pressure of the effused fluid in the abdomen. He stated that he had not coughed at all at the commencement of the disease: he did not complain of any pain in the stomach: Pressure on the abdomen, except when forcible, was not painful; but even then the pain was so obscure that nothing could be concluded from it. We know that the abdominal viscera cannot be compressed without producing uneasiness and even some pain, and when the parietes are rendered tense by a fluid, for Boulard's tissue was very renitent, it should not create surprise that pressure is borne with difficulty.

Add to this, obscurity respecting the organ primitively affected, the entire absence of fever, an excellent appetite, and unaltered complexion; and it was enough to lead to the belief of the dropsy being essential and primitive.

However, from the consideration that it was not probable that the general absorbents had remained torpid for so long a time, if

they had not been constantly subjected to the sympathetic influence of some suffering organ, I persuaded myself that there existed a disorganization in some one of the viscera. However, as the disease must be incurable if that were the case, I did not attend to any other indication except that of evacuating the fluid; this was not contraïndicated by any idiosyncrasy.

I made so successful a use of aperients, of squills, &c. that in less than twenty days my patient was entirely relieved from his swelling. There only remained a slight tumefaction, nearly the same as he had during the campaign. But, finally, stimulants lost their effect; the dropsy returned, soon became enormous, and Boulard expired on the 6th of April, nearly five months after the commencement of the disease.

AUTOPSY.—Thorax. Both lungs compressed by the elevation of the diaphragm, every where solidly adherent and engorged, but without any trace of disorganization. The *heart* appeared to me a little enlarged, and rather rounder than usual. *Abdomen.* Milky serosity in its cavity; peritoneum thickened, opaque, and almost every where covered with a white pulpy exudation, easily broken. Spleen very large, but its parenchyma natural; liver healthy; the mucous membrane of the alimentary canal throughout natural.

Observations.—I cannot forbear here recalling the opinion which I have already expressed respecting the change of a prolonged simple exhalent or secretory action into a true phlogosis. The preceding cases have shown us this progress of irritation to pain and fever. Here we observe with surprise, that, without assuming these characters, the disordered organic action equally destroyed the structure of the parts which were its seat, and that it caused the same suppuratory products. The cold, if some local cause has not intervened, as a fall or contusion, the moist cold has caused a check. The cellular and serous tissues have become the depot of fluids requiring evacuation. Instead of a lymphatic fluid, the peritoneum exhales a purulent one, and this tissue is disorganized. All this occurs without pain, and without any other lesion except that of the absorbing power of the general cellular tissue. These are all the conclusions that can be drawn from the case of Boulard. It is unfortunate for medicine that such a mechanism should not be better understood. It is a reason for studying it more particularly. Every

lesion has its peculiar symptoms. If so many diseases still appear to us obscure, it is because we do not know how to interpret the language of nature, and because we are not sufficiently acquainted with physiology.

We have repeatedly seen ascites dependent upon latent peritonitis disappear, so as to lead to a belief of a cure, during the use of stimulants and diuretics. But the post mortem examination has proved that the alterations of texture, the caseiform exudation, or all others unsusceptible of assuming the fibrous or cellular form were invincible obstacles to a radical cure. This teaches us to distrust the numerous cures of writers in the obscure cases of dropsy, and to doubt the causes of the pretended relapses to which many of them have attributed the slow deaths, which they regard as entirely independent of the disease which they had at first treated with success.

To enable it to be still better understood how obstinate the irritations of the peritoneum are, and how reserved we should be, in general, in pronouncing chronic affections of the viscera to be radically cured, I proceed to relate a case of latent peritonitis, over the development of which I in a manner presided.

CASE L.—*Chronic peritonitis without fever following the administration of an emetic.*—Robinet, grenadier of the ninety-second regiment, aged twenty-eight years, chestnut-coloured hair, slender and regularly formed, entered the hospital of Nimeguen, 22d Germinal, an. XII. with symptoms of gastric disorder, (*embarras*,) anorexia, nausea, and uneasiness, without fever. I ordered an emetic: after the vomiting which it excited, the abdomen was found meteorized.

The next day the meteorism had increased, no fever, mouth clean but no appetite, constipation. Pressure, unless very forcible, did not cause decided pain, and even then there was only an obtuse sensation of uneasiness.

The day afterwards I gave a cathartic potion to relieve the constipation which I attributed to the constriction of the intestinal canal, a sort of spasm, of which I in vain endeavoured to form an idea. No evacuations from the bowels, but also no pain.

I continued in doubt as to the nature of the disease, employing a demulcent regimen, etherized antispasmodic potions, alcoholic frictions on the abdomen, with the view of expelling the retain-

ed gas. No effect by the 30th of the month, the seventh day from the administration of the emetic. Finally, the obstinacy of the constipation determined me to give a solution of manna with oil and lemon syrup, in divided doses. Stools were produced, but the elastic tumefaction did not disappear. I recurred to the use of antispasmodics and stomachics; little appetite; the figure somewhat changed. Several enemata with assafoetida and honey readily induced some alvine discharges during the three subsequent days, and on the 3d Florial, the meteorism having considerably diminished, I perceived a manifest fluctuation.

The appetite began to return; I gave light food, as Robinet could take it without fatiguing his stomach, and I endeavoured to cure the ascites, which by the end of five or six days had become very considerable, by a decoction of laxative roots with oxymel of squills, by frictions with equal parts of tincture of squills and laudanum, and by opium dissolved in the mouth, a method by which my friend and colleague, Dr. Carafa, has obtained many surprising cures.

This treatment commenced the 7th of Floreal, and continued with such modifications as circumstances rendered necessary, gradually effected the reabsorption of the effused fluid, and Robinet was dismissed the 15th of Praireal, apparently quite cured.

The 9th of January, 1807, Robinet entered the hospital of Udine. He had been for various periods in the hospitals, constantly incommoded by the swelling of the abdomen, which had become slightly painful. He had been sent to the depot of his regiment, but he was tired of it; and finding that his abdomen was constantly increasing, he thought that exercise would be serviceable, and he requested and obtained permission to enter into a battalion in active service. He made the campaign from Holland to Friouli with his corps; but he became worse for it, for he was always much inconvenienced by the swelling and pain in the abdomen, and by the difficulty of respiration during the marches, when he carried his knapsack.

His colour was now excellent, he was fat, and exhibited all the exterior attributes of strength and health; but his abdomen was tumefied at its lower part when he held himself upright, and uniformly when in a recumbent posture. Fluctuation was manifest in it. The patient began to experience constant pain in the epigastric region, and over the whole bottom of the chest. He

suffered during the whole of the second night after his arrival, from pain in the region of the spleen: even slight pressure was painful.

I knew too well the origin and progress of this disease, to entertain an instant's doubt of its being a chronic peritonitis. As it had already continued twenty months, I did not dream of a radical cure; I in a few days obtained for Robinet as much relief as comported with his condition, by means of demulcents and emollient fomentations. Rest, doubtless, was still more effectual. As to food, it sufficed to allow him such only as was not too irritating. Robinet had a good appetite, and digested food readily. During his continuance in hospital, I wished to solicit the absorption of a part of the fluid, for the abdomen became very large, by frictions with oil of turpentine and tincture of squills. Acute pain in the abdomen resulted, which was promptly alleviated by emollient fomentations.

Finally, after twenty-two days, he left the hospital, having no other inconvenience but an abdomen distended with fluid, but which did not affect either the strength or appetite; I reported him for exemption from service, and some months afterwards he received his discharge.

Observations.—It would be very difficult to refuse belief to the emetics having given rise to the revulsion of action which suddenly made the surface of the peritoneum a centre of determination of serous fluid. I omitted no inquiry in order to ascertain whether he had not had some anterior local cause, but I always received negative answers. Robinet had not been sick, he had not been exposed to the action of cold, at least so as to affect his health. I never could ascribe the sudden meteorism with constipation to any thing but the action of the emetic. This fact compared with those already quoted, does not permit me to doubt that the efforts of vomiting may, under certain circumstances, cause peritonitis. But what are these circumstances? Facts must show them to us: we have related some of them, which we shall again collect together, when treating of the etiology of the disease under consideration.

I will not repeat what I have said respecting the passage of simple increased exhalent action to phlogosis. I am convinced that no physician will think of doubting Robinet's being a victim to chronic peritonitis. After having been latent for many

months, it exhibited symptoms sufficiently characteristic to enable it to be recognised. I will not dwell further on the disappearance and the return of the effusion to prove that the cure of an ascites may be illusory; but in observing that the effused fluid resisted absorption, when Robinet was in the hospital of Udine, I cannot refrain from submitting one reflection which this fact suggested.

So long as the organic action was but slightly altered from its natural condition, the effused fluid also nearly resembled pure serum; the absorbents could then remove it; but when this action became so deranged as to alter the texture and properties of the exhalent vessels, the fluid poured out by them was too heterogeneous to be suitable to the vitality of these same absorbents. On the other hand, these vessels must participate in the local alterations, diminish in number, and lose much of their activity.

These changes correspond very well to the progress of latent phlegmasia; but it must not be concluded from this that the effused fluid cannot considerably diminish in quantity. I thought for a long time, that a thickened, granulated, and disorganized serous membrane, could not contain absorbent vessels enough to be partly emptied. But I have seen proofs to the contrary, and I have already collected several of them in the history of pleurisy. These vessels do not remove all the excreted matter when there is a concrete, caseous substance; but they deprive the fluid of its lymph, and of what is sufficiently thin to enter their orifices, and there remains upon the inflamed surface some layers of membrani-form concretion, and a kind of matter like the detritus of this substance, which had been dissolved by the effused serosity.

We have followed peritonitis from the most acute state to the most chronic. We have seen the pain and fever gradually disappear. We have noticed cursorily the signs of the complication of the phlogosis of the gastric mucous membrane. We now proceed to offer an example of some other complications, which we have not as yet met with, and to continue our comparisons of the causes and circumstances which favour the development of chronic peritonitis.

CASE LI.—*Chronic peritonitis, with tumefaction of the mesenteric glands, following an intermittent fever.*—Raviot, a soldier in the ninety-second regiment, aged twenty-six years,

dark chestnut-coloured hair, high colour, thorax somewhat contracted, muscles tolerably vigorous, was attacked with tertian fever, on the 6th of September, 1806. The fifth day, he entered my ward in the hospital of Udine. He was vomited, to remove a complication of gastric derangement, and was cured of his fever in fifteen days, by the sole use of antispasmodic draughts made with laudanum, ether, and distilled aromatic waters. Although relieved from the paroxysms of fever, he remained for twenty days more in the hospital, because, without any appreciable cause, and immediately after the cessation of the fever, he experienced pain in the abdomen. His digestion became painful, he went to the close-stool but once in the twenty-four hours, but he remarked that his excrements were mixed with viscid matters. His abdomen insensibly became somewhat swelled and hard, and there was no restoration of his strength.

After remaining five weeks in the hospital, Raviot left it, hoping for a complete relief from the open air; but he was unable to do duty.

He remained feeble and languid for a month, his abdomen still continuing tense and obscurely painful. Whenever his foot slipped, the shock was felt in the abdomen, and caused a violent pain in it. Finally, about the close of the third month from the commencement of the fever, Raviot was compelled to reënter the hospital.

His abdomen was prominent, fluctuating, renitent and painful on pressure. The patient experienced a slight but continued pain in it, and declared that from the moment he first felt it, it had gradually augmented. He went to stool twice a day, his evacuations were solid and without mucus. His face began to appear somewhat altered, the appetite was almost gone, the pulse small, feeble, not very frequent, the heat of skin natural. No other pectoral symptoms were observable, except a slight sensation of uneasiness and constriction, which I attributed to the pressure caused by the fluid. I was unable to attempt any radical treatment. Tonics and anodynes were my only resource.

The 10th of December the pulse had become frequent, small, and contracted; the skin hot. There was dryness of the mouth and thirst. Raviot expired on the 11th, without a struggle.

AUTOPSY.—Habitude. Semi-marasmus, no œdema. *Head,* natural. *Thorax.* Some of the bronchial glands scirrhus, none

so in the parenchyma. *Heart*, healthy; serum in the pericardium. *Abdomen*. Peritoneum every where red and thickened, except on the stomach; the intestines agglutinated together by a white exudation, which became thread-like when they were separated. The peritoneal tissue was red and thickened, partly covered by the exudation, and studded with white spots filled with tubercular or pultaceous matter; it had a mottled appearance. The omentum deprived of its fat, degenerated and resembling a piece of bacon, was spread over and adhered to the intestines. The mesentery had acquired a thickness of at least two inches, and its glands, which were tumefied, appeared scirrhus and tubercular at their centre. The convex surface of the liver adhered to the diaphragm by an exudation which presented the commencement of a fibrous and cellular state. The mucous membrane was generally found healthy, except in some places, where black spots were visible, which were found to be gangrenous eschars implicating the whole thickness of the intestine.* Several of them even communicated with the omentum, which in some places left perforations in the colon, the end of the ileum, and cæcum, when I separated it from them. There was no effusion of fluid; the product of the phlegmasia was reduced to this white exudation, which united the omentum and intestines in a large mass. I had nevertheless felt a manifest fluctuation some days before his death.

Observations.—This peritonitis arose under my eyes; I suspected it sufficiently early to put every question to the patient that could enlighten me as to its determining cause. I was unable to discover any thing satisfactory. He never was sensible of

* This membrane was far from being healthy, since it was perforated. Primitive peritonitis does not cause perforations of the serous membrane, and still less so of the mucous; but when this is inflamed, it ulcerates and is destroyed with the muscular coat which adheres to it. Then nothing remains but the cellular surface of the peritoneum, which generally resists and furnishes granulations for the cicatrix. But if the irritation still persists, this membrane at last is converted into an eschar at the bottom of the ulcer. It is thus that those pretended spontaneous perforations are formed which suddenly cause a tympanitis with phlegmasia of the peritoneum, and a speedy death. The tubercular masses in the mesentery, which were found in this subject, correspond to this phlegmasia of the mucous membrane, which I then misunderstood, as the redness had disappeared. Peritonitis alone never swells these ganglions. I have wished to say something more on this process.

his pain until after the entire disappearance of the fever.* Notwithstanding this obscurity, I will hazard a conjecture. As the pains were very slight at first, and augmented very slowly, I imagine that this morbid action had existed for some time in the peritoneum, before the patient was sensible of it, and that it arose whilst the fever still lasted, perhaps even soon after the vomiting. I feel confirmed in this opinion, 1st, by the preceding case, and by several others in which the disease began by an obscure derangement of the abdomen, which did not become painful for some time afterwards; 2d, because I have often seen peritonitis begin in an obscure manner whilst the fever still existed, so that the paroxysms appeared to be destroyed only by the constant presence of the pain in the peritoneum.†

I have often observed this complication in Belgium and Holland; but not having remained long enough in these countries to collect complete histories of them, I can only give a summary of what struck me. I have generally remarked that the chronic peritonitis supervening on intermittent fevers, could be traced to the epoch when the paroxysms were at their height. It has often appeared to me that the duration of the fever was only prolonged by the irritation of the abdomen, and the difficulty that existed of giving strong doses of febrifuges, and that finally the latent phlegmasia excited a slight febrile action in which the intermittent type was lost. Such are the reflexions suggested by the post mortem examination of five subjects affected with chronic peritonitis, who died in the hospital of Nimeguen.

Bark is generally accused of producing the engorgement or obstruction of the mesentery; we shall hereafter return to this pretended obstruction. I will content myself here, with observing that this patient had taken no bark. I do not pretend to deny that there is some relation between intermittent fevers and the

* The fever had then preceded the peritonitis, but this fever was a gastro-enteritis, which confirms the explanation in the preceding note.

† It is seen that I only had a glimpse of the mode of formation of peritonitis, which, in fact, generally commence by gastro-enteritis. I now think the latter may produce them, even without perforation; the phlegmasia implicating the whole thickness of the digestive canal. It may now be judged how dangerous a stimulating practice is which continually exasperates the phlegmasia of the mucous membrane of the digestive canal.

alteration of the mesenteric glands,* between the improper use of bark and this same alteration; but I seize with pleasure this opportunity of stating, that I have seen the mesentery diseased with peritonitis independent of intermittent fevers, and with peritonitis occurring at the commencement of these fevers, before there had been any abuse of bark. I will add, that among the victims of this remedy I think I have seen more gastrites and enterites, than peritonites or affections of the mesentery.†

In the succeeding case of peritonitis, which arose under the same circumstances, the derangements were more considerable than in the preceding. This is not astonishing, as the disease was of much longer duration. It is enough to say that it was less painful and febrile. In the phlegmasia of the peritoneum, as in all those we have hitherto considered, the pain is always the aliment of the fever, and we have constantly observed that the longer the phlogistic action had continued the greater was the change of the organs, in which it was seated, from their physiological conditions.

CASE LII.—*Chronic peritonitis with alteration of the mesenteric glands, supervening on intermittent fever.*—Benoitet, a young man twenty-three years of age, dark complexion, slender, but well-formed, and delicate, neither muscular nor high-coloured, had intermittent fever for a long time in Holland, for which he took much bark. I first treated him at Nimeguen for a sensibility of the abdomen, with swelling and a disposition to a greater enlargement when he would do duty. The symptoms were alleviated by repose and demulcents, and seemed about to disappear. I again found him at Bruck in Styria, about six months afterwards. He had then been unwell for more than eighteen months.

He complained of a deep-seated pain in his abdomen, on pressure, and even without this being made. This pain was constant, corresponding in no respect to the times of the alvine evacuations, which were rare and difficult. He said he experi-

* There were, since the mucous membrane is always irritated in these fevers.

† At this time I considered the swelling of the mesentery as subordinate to the peritonitis, but I was in error. Chronic peritonitis may enlarge and render the tissue of the mesentery lardaceous, but I have never yet seen it cause a swelling of the lacteal glands.

enced a sensation of a ball, which incommoded him, especially after eating; he had scarcely any appetite, he felt himself growing weaker, and asked for wine; his pulse was gaseous, not very frequent, skin cold, complexion pale, body attenuated and already in a state of advanced marasmus; he had no trace of an exacerbation in the twenty-four hours. Benoitet declared that he was very ill, and appeared melancholy and discouraged, like a man who feels that life was leaving him, but he did not experience either acute pain or agony. When the hand was placed on the abdomen a manifest fluctuation was perceptible, and something renitent, and even compact, was distinguishable through the attenuated parietes.

Benoitet having been judged incurable, was treated with tonics, wine, anodynes, and the lightest food only: he grew weaker and became so extenuated in a fortnight, that he resembled a decrepid old man. The two last days of his life, he could take nothing except a few spoonfuls of soup; this arose from a loathing and uneasiness, for he never complained of vomiting, or even of nausea. He finally expired as if from old age, and in the last stage of marasmus, about the nineteenth month of his disease.

AUTOPSY.—*Habitude.* Muscles very slender and pale; no infiltration. *Thorax.* Intimate and general adhesions, compression of the two lobes from the tumefaction of the abdomen; a small indurated point towards the posterior—inferior portion of the left lobe; serosity in the pericardium. *Heart.* Small and healthy. *Abdomen.* The cavity was filled with a yellowish fluid, containing yellowish or whitish pultaceous flakes, no fœtor. The peritoneal surface, in general, covered with asperities, and studded with white membranous spots resembling the flakes in the effused fluid. On the stomach and in the omentums, the serous membrane was opaque, reddish, or gray, and tripled or quadrupled in thickness. On the liver and spleen, which were much diminished in size, it was similarly disorganized. The mesentery presented all along the vertebræ an irregular mass, of the size of the arm, resulting from a mass of extraordinarily developed glands, and almost entirely reduced to tubercular matter; several glands had acquired the size of a hen's egg. The mucous surface of the digestive canal presented no alteration worthy of notice.*

* Here is another case in which I did not perceive the traces of phlegmasia of the mucous membrane of the small intestines.

Observations.—In this case the peritonitis had a very obscure development during the continuance of the intermittent fever. It was attended with so little pain that the patient was able to accompany the army on a very laborious and rapid march. The engorgement, the degeneration of the mesenteric glands, which was not the work of a day, did not prevent the absorption of the chyle from being perfect, so that the excrements were always voided in a dry state; this was also observed in Raviot, whose case precedes this. What then becomes of the theory of lenteric diarrhœas, with evacuations of chyle, from engorgement of the glands of which we are speaking, which a host of practitioners imagine they meet with every day? Is the structure of these glands well understood? May not a certain quantity of pultaceous matter be deposited in their tissue, without the function of the organ being sensibly altered? Has not too little attention been paid to the state of the mucous membrane in those diarrhœas of children or adults which have been boldly attributed to an obstruction in the mesentery? These questions will some day be resolved.*

I now offer to the consideration of my readers, a peritonitis of a very chronic character, whose cause is evident. The complications which took place in the course of the disease, and the nature of the organic derangements, give a particular interest to this case.

CASE LIII.—*Chronic peritonitis resulting from a fall.*—Rimbaud, aged thirty-five years and a half, soldier in the seventh battalion of the artillery train, below the ordinary stature, chestnut-coloured hair, high complexion, muscular and robust, fell under the feet of the horses of the caisson he was driving, when the second corps of the grand army passed the Carinthian mountains, in the autumn of 1805, and received some severe contusions on his body. After this accident he suffered pains in the sides of the abdomen, which frequently changed their situation, and pleuritic stitches with cough. He was at first bled, and was afterwards several times under medical treatment, both with his corps and in the hospitals. The pains were alleviated by rest, and exasperated by fatigue. Finally, the affection of the chest

* Several already are.

was cured; but the abdomen remained sensible, and subject to returns of the pains, which did not affect any particular spot.

In the summer of 1806, he passed a month under my care, in the hospital of Udine. He then complained only of increased pain in the left flank, but which changed its place. The abdomen was somewhat prominent and sensible. Repose and demulcents led him to believe that he was reëstablished, but he had scarcely left the hospital when he had a renewal of his pains. He still continued to do duty as long as his strength enabled him; finally he was obliged to return to the hospital, on the 3d of March, 1807, fifteen or sixteen months after his first residence in the hospital of Udine.

He stated to me, that for the last four months, the motion of a horse occasioned him a sensation of uneasiness in the abdomen, and that this part augmented in size; that for six weeks past the pains had greatly increased; that he had frequently experienced a desire to vomit, especially after having eaten; that he felt that he was in a constant state of slow fever; that for the last three weeks the tumefaction of the abdomen had made great progress; that for eighteen days past he had a cough, and finally for five days he had had frequent attacks of tenesmus, and even a slight diarrhœa. I found this patient in the following state.

Face flushed on the middle of the cheeks, skin hot, pulse frequent, active, moderately large and hard; dry cough without pain in the chest. Abdomen tense, renitent, fluctuating, painful on pressure, inclination to vomit, and a kind of gastric embarrassment, tenesmus. The patient could not lie extended, he often changed his position. He said that he experienced much uneasiness, and a constant and general, but dull pain in the lower part of the abdomen.

I prescribed demulcent, mucilaginous, and oily drinks. Afterwards, as the tenesmus gave rise to no alvine evacuation, I made him take whey with manna and cremor tartar, which procured a free passage and marked alleviation. Some doses of anodynes at night were often advantageous and necessary. Such was the state of the patient on the 5th of March, three days after his arrival.

The 8th. The frequency, heat, and cough had greatly subsided. The heat and redness of the cheeks was not strongly marked, except in the evening exacerbations. The cremor tartar whey

had been continued. It was necessary to discontinue it, as it had occasioned vomiting and kept up the diarrhœa. The 10th, there was as yet no emaciation.

13th. But slight frequency of pulse. The patient was paler, his abdomen grew larger, he had nausea and vomiting, which obliged me to reduce his food, after which digestion was performed with more ease. The cough much less. 28th. He felt himself so well that he began to entertain hopes: the effect of a strict, farinaceous diet and demulcents. No fever, the abdomen smaller and less sensible.

29th. Uneasiness in the abdomen, increase of frequency of pulse, pectoral symptoms much diminished. Demulcents; opium indispensable in the evening.

April 5th. Emaciation begins to be evident, pulse generally tranquil.

May 3d. The regimen and atmospheric heat have removed the pectoral symptoms. There now only remains the affection of the abdomen, which no longer incommodes the patient, so that he believes that he is convalescent, and demands an augmentation of food. As the heat, cough, vomiting, and pains in the abdomen were several times the result of this being granted, perseverance in the same plan of treatment. There has been a complete apyrexia for some time.

The 18th, 24th, and 26th of May. Transient returns of dyspnoea, febrile action, colics with cutting pains, and vomiting from a slight excess of food. Calm reëstablished. The 4th of June, he slowly becomes extenuated during the apyrexia; his emaciation is extreme.

June 9th. Frightful falling away; he cannot articulate; abdomen depressed and only presents a tumour at its centre, which was painful on pressure. The patient has not been able to take any food for several days. To day, however, he eat some peas with much pleasure. June 12th, he died calmly, in a comatose state.

AUTOPSY.—*Habitude.* Last stage of marasmus, without infiltration. *Head.* The lateral ventricles dilated by a reddish serosity. The middle fossæ also contained it. *Thorax.* Some small dry tubercles conglomerated in the superior portion of the right lobe, a slight induration around them. Some old adhesions between the pleuræ. The base of the left lung adhering to the

diaphragm by a lardaceous, unorganized exudation. *Abdomen.* The whole of the peritoneum thickened, opaque, and covered with a black exudation, which served as a mode of adhesion among the viscera. This adhesion was solid, fibrous, and as if organized, and in some places was identified and continuous with the serous membrane, as is often seen in the chest. This disposition was very remarkable at the sharp edge of the large lobe of the liver, the serous membrane of which was continuous with that of the arch of the colon. The peritoneum of the anterior parietes communicated with the omentum by similar cellular productions, as did the intestines with each other. On the middle of the omentum, the black exudation was found several inches in thickness, and it was seen that it was this mass which had elevated the muscles and formed the tumour.

The black colour communicated to the peritoneum by the exudation, was interrupted by innumerable tubercular grains.

The stomach and intestines being opened, showed that their mucous membrane was healthy, except that in the stomach, in a point of adhesion, the disorganization had implicated the whole thickness of the viscus.

Observations.—It appears evident to me, 1st, that the contusion, which had been general, left durable traces in the peritoneum only; 2d, that the pectoral symptoms which appeared during his last residence in the hospital, viz. the cough, frequency of pulse with heat and redness of the cheeks, were foreign to the peritonitis, and depended on cold accidentally contracted, as was stated by the patient; 3d, that the tubercles and circumjacent induration were the effect of this point of irritation; 4th, that diet and warm weather arrested their progress; 5th, that Raimbaud perished from the progress of the peritonitis; 6th, that the gastric symptoms which were remarked towards the close, were the result of the extension of the phlogosis to the mucous membrane of the stomach. It is also to be perceived, that the fluid portion of the product of the phlogosis, disappeared before death.

May we not be led to the conclusion that the exudation which was formed on the inflamed peritoneum, tended to disorganization, and served as means of adhesion and cure like that which is the product of pleurisy? MM. Bayle and Bailly have also met with these cellular productions, and have regarded them as

the result of the organization of the fibrine. I believe that this organization is subordinate to the degree of inflammation, as I have said when treating of pleurisy, and that a too great intensity in the phlogistic action, or its too great duration, prevents this from taking place, by continually furnishing a new excretion, which separates the adhering surfaces, breaks the substance which was about to be converted into living tissue, dissolves it and converts it into that caseous and pulpy substance which is sometimes found so abundantly. It must also be admitted that degrees of phlogosis exist in which the excreted matter is never in the necessary conditions to form an organized tissue.

The tubercles and small depots of tubercular matter appear to me the result of a too long exerted action of the lymphatic capillaries. This kind of alteration may be primitive and consecutive to the irritation of the arterial capillaries; I believe that it is generally consecutive, but we are still obliged to admit that certain temperaments are more disposed to it than others. It is very certain that Raimbaud's lymphatic apparatus was neither enfeebled nor too irritable. It is scarcely possible to meet with a glandular system so little altered, and so small a quantity of tubercular matter in an inflammation of nearly two years standing. But it is to a fortunate disposition that I attribute the facility with which the inflammatory exudation was converted into organized tissue; and I have no doubt if Raimbaud could have remained at repose for a sufficient time and followed a mild regimen, that he was susceptible of being cured even at a very advanced period. Let us, therefore, be as cautious in despairing of a patient attacked with chronic peritonitis, as in pronouncing on the incurability of a phthisis, a gastritis, or an enteritis.

Chronic peritonites are often the result of contusions of the abdomen, either from the pressure having altered the tissue of the spleen, conformably to the mechanism already developed, or from its action being confined to producing a forcible friction between the different duplicatures of the peritoneum. I have made this observation on a great number of patients who met with accidents whilst working on the fortifications of Palma Nuova. I had already observed this fact in Holland, in several soldiers who experienced chronic pains in the abdomen, contracted in working in the erection of the pyramid at Zeist. It has even appeared to me that inflammations of the serous membranes were

the most usual lesion from contusions, falls, or shocks which had not been sufficiently violent to destroy or break the capillary tissues of the different parenchymata; that is, that the serous membranes were more easily injured from these causes than the parenchymata, and recovered with more difficulty from the alteration produced by the commotion. I have seen these membranes almost wholly phlogosed from a simple fall.

CASE LIV.—*Chronic pleurisy, carditis, and peritonitis resulting from falls.*—Pacot, a conscript, of a tolerably delicate form, fell forwards on his musket, in marching to join his corps. He felt violent pains in the left side of the chest, and in the hypochondrium of the same side, and spit blood, but still continued his route. The expectoration was not renewed, but he continued to feel pain through the whole of his breast, and the cough increased. When he was admitted into the military hospital of Udine, he coughed almost continually without ever being able to expectorate; he could not remain in a recumbent posture, was restless; the easiest position to him was lying on the right side, with the body much bent forwards and the face almost prone. He often sighed and complained of an inexpressible uneasiness, which he referred principally to the epigastrium and about the cardiac region; the hypochondria and abdomen were painful, although infinitely less so. The patient was deprived of sleep, and constantly begged for opium; he was uneasy about his disorder, and very impatient at not being relieved.

The pulse was frequent, but no febrile heat was perceptible during the twenty-four hours. Percussion caused a dull sound in both sides of the thorax; it was very painful, especially on the left side: pressure on the abdomen could not be borne. The appetite was very vigorous, but the general anxiety was always greater when the patient had been permitted to satisfy his hunger; he was not much emaciated.

After twelve days sojourn in the hospital, during which I contented myself with prescribing anodynes, demulcents, and a mild and spare diet, Pacot expired without a struggle, about the third month of his disease.

AUTOPSY.—*Habitude.* Slight infiltration in the feet. *Thorax.* The right cavity contained a limpid serosity, the lung somewhat compressed, the serous membrane unaltered, but some of

the bronchial glands were swelled and tubercular. *Left cavity.* General inflammation of the pleura, which every where adhered by a red, compact, firm tissue, bloody when torn. An abundance of tubercular granulations were perceptible in the tissue of the membrane, which was red, thickened, and indurated. The parenchyma was filled with tubercles, all reduced to a white jelly, but none of them so emptied as to leave a cavity. (Hence there had been no purulent expectoration.) The parenchymatous tissue was every where engorged and sanguinolent, but was not indurated, except around the largest tubercles. Viewed generally, it was tumefied by the blood, and exactly filled the cavity. *Heart.* Pericardium filled with a reddish serosity containing yellowish membranous flakes, analogous to the exudation covering the heart. Under this exudation, the serous membrane appeared white, and was full two lines in thickness; the tissue which connected it to the heart contained lymph. The muscular fibres were softened and easily torn; the heart somewhat aneurismatic. *Abdomen.* The peritoneum red, studded with white tubercular grains. Several hydatiform vesicles were prominently visible on the mesentery and intestines; they appeared to result from the elevation of a transparent layer of the tissue by a limpid serosity. All the mesenteric glands were enlarged and almost entirely reduced to a tubercular matter, all the tissue comprised between the two laminæ of the mesentery was degenerated, tubercular, and lardaceous. The liver and spleen presented nothing particular.*

Observations.—Although the parenchyma of the lungs was greatly phlogosed in this disease, it is easy to distinguish that the serous membranes were the immediate seat of the lesions, and that their inflammation was not a consequence of the other. The inflammatory points arising in the capillaries of the lung might readily extend to the serous membrane, but then the pleurisy would appear recent, and this would be recognised by the slight progress which the exudation had made towards the fibrous organic state. In this case, on the contrary, the cellular form of the adhesions, the tubercles, the degree of consistence and thickness of the serous membrane of the lungs, all show that it had

* This autopsy is deficient in a description of the mucous membrane; I cannot now supply it from memory.

received the inflammatory impression at the same moment with the parenchyma. How, also, can we refuse to admit that the exhaling tissue of the pericardium and heart, as well as the peritoneum, were affected at the same time, when traces of a phlegmasia quite as chronic were perceptible in them? It is also evident, that in this case the sanguine phlogosis preceded and determined that action of the lymphatic system which caused the production of the pultaceous, tubercular matter.

As to the symptoms, it may be remarked, that the pains in the pleura and pericardium were the principal source of the anxiety, that they masked the peritonitis, and that the alteration of the heart did not permit any development of the pulse or heat of skin.

Since we have particularly fixed our attention on protracted peritonitis, we have scarcely perceived any febrile action, except when the phlogosis suddenly assumed the acute character, which often takes place just before death.

When fever has supervened in chronic peritonitis, it has always appeared to correspond to the pain, whence we have concluded that it generally depends on it.

We have equally remarked that the fever was always more violent when the passage from the chronic to the acute stage took place at an early period, before the exhaustion of the strength; but this acute form cannot last long without producing marasmus and exhausting the resources of life. We will now condense our conclusions by saying, 1st, inflammation of the peritoneum may be acute and chronic; 2d, when it is acute it is painful, and the more chronic it is the less pain attends it; 3d, although painful, it is not always accompanied with a violent fever; but it does not produce fever without being painful;* 4th, when it causes no pain there never is any fever, although it may be extremely chronic, and fill the abdominal cavity with the product of the latent irritation, even when a part of this product may be absolutely absorbed, because the pus is not depraved, and cannot be so without causing pain. If a febrile action exists, it is the effect of some other focus of irritation. The degree of the febrile agitation, as well as the duration of the disease are then always in direct rela-

* It should not be forgotten that every local feeling of uneasiness or distress is a real pain.

tion to the pain of the inflamed part. Pain is therefore the principal aliment of the fever, as we have stated.

But in peritonitis, as well as in all the phlogoses of which we have treated, there exists another cause of fever; this is the absorption of putrid pus. This cause may be combined with the former, but it may also be independent of it. On the inflamed surface of the peritoneum we never see it keep up fever without the concurrence of pain. From this combination there results a hectic much more rapid in its progress than those we have hitherto seen in chronic peritonites; a hectic which much more quickly exhausts the forces, and is stamped with particular characters. It is clear that it must be arranged by the side of hectic from suppuration of the pulmonary parenchyma, that of pleurisies with solution of continuity and communication with the external air, with that which depends on traumatic pleurisy; finally, with those which accompany all suppurations in which the pus communicates with the air.

We will present a most striking example of it.

CASE LV.—*Chronic peritonitis with perforation of the intestines.*—Pagnet, aged twenty-two years, fusileer in the eighty-fourth regiment, received a blow from a hatchet on his foot, which carried off the first phalanx of the great toe, and both of the next toes. Admitted into the hospital of Udine for treatment, he remained three months in the surgical ward, during which time the following symptoms were observed.

On his arrival, this patient complained of pain in the abdomen, which was very tense, and his pale countenance announced that he had been sick for some time. He had no diarrhœa. The wounds, although simple, did not heal; they constantly remained ill-conditioned, from time to time giving rise to pretty abundant hæmorrhages. He also had a slight fever, which was distinctly marked in the evening only, by an acceleration of pulse with augmented heat of skin. He was treated, internally, by generous diet and tonic medicaments, which were judged necessary to relieve the state of languor in which he found himself. But the antiscorbutics were obliged to be suspended, as they harassed the stomach, which sometimes rejected them. The surgeon-major found himself restricted to the administration of demulcents, notwithstanding his wish to strengthen him.

About the 15th of May, a fortnight before his death, Pagnet stated that the pains in his abdomen, which hitherto had been dull and confused, were becoming acute. In a short time they made such progress that the weight of the bed clothes was insupportable. The fever became very violent, with a burning heat, and all the excretions of a stercoral fetor.

It was wished to administer a comforting draught with diascordium; he vomited it, however small a quantity he had swallowed of it. He had no relaxation of pain during the five or six days that preceded his death. He continually suffered terrible agonies, and was consumed by a burning fever, whose violence appeared far beyond his strength. It soon had produced the last degree of marasmus, in which he expired horribly fetid, and having vomited even to the last moment, every stimulant that was administered to him; lemonade and solutions of gum arabic were the only medicaments that his stomach would support.

AUTOPSY.—This gave evidence of a universal peritonitis, with a concrete, black exudation, sanious, liquid, grayish, blackish pus, of a stercoral, gangrenous, and cadaverous fetor, filling all the intervals between the adhesions. The intestines were sphaclated throughout their whole thickness in a multitude of places, and so perforated as to appear like a sieve. In examining the effused matter, it was evident that it was mixed with excrements, and the gas in the peritoneum had the same odour as that which escaped from the intestines. The mucous membrane was every where healthy, except at the perforated spots. The body presented no other marked lesion.

Observations.—This is the only peritonitis with perforation of the intestines I have met with. I am indebted for the above details to M. Bernard, who superintended the dressing, under the direction of M. Chabert, chief surgeon of the hospital. The post mortem examination was made in the presence of all the physicians employed in the hospital. I myself saw and examined the patient at different times, otherwise I should not have given this case, having resolved to advance nothing in this work, that I had not myself verified. The characters which were peculiar to this case were, 1st, extreme sensibility of the whole abdomen; 2d, a very rapid hectic, with burning and dry heat; 3d, the stercoral fetor of the cutaneous and pulmonary excretions. It

is evident that the peritonitis existed before the patient was wounded; that it remained a very long time latent and almost without fever; that it alone prevented the cure of the wounds, and that the epoch of the invasion of the fever, and exasperation of the pain in the abdomen, with fetor of the excretions, was that of the perforation of the intestines, and the absorption of fetid, gangrenous, and stercoral pus. Compare this case with the pleurisies with perforation of the pulmonary parenchyma, Vol. I.*

I will give the history of peritonitis from the facts that have been detailed, and from others which I have only indicated or analyzed, but which, nevertheless, came under my own notice.

CHAPTER V.

GENERAL HISTORY OF PERITONITIS.

Etiology.

IN pursuing the plan hitherto adopted of developing the predisposition before enumerating the most manifestly active causes, which have been called *determining*, I should not throw much light on the etiology of peritonitis, because the general state of the body which is the most favourable to the formation of this phlegmasia does not differ from that which predisposes to all the others; plethora, mobility of the vascular system, disposition to localizations proved by phlogoses, local determinations, and repeated discharges of fluids; such is the individual state which gives the greatest hold to inflammations of every kind. But why, this predisposition existing, does the inflammatory irritation fix itself rather in one place than in another? It is very important to know this. That my observations may throw some light on this great question, I will examine the particular causes of peritonitis, proceeding from the most evident to the most obscure, in the following order:—

1st. External influences which most evidently tend to irritate

* I still regret that I did not ascertain whether the perforations in the intestines took place in the middle of an ulcer in the mucous membrane, for such a disposition would prove that the internal phlegmasia must have preceded the external, which is generally the case.

the peritoneal surface, or mechanical or chemical arising from the exterior.

2d. Mechanical or chemical irritations whose source is in the individual.

3d. Certain organic actions depending on a derangement of functions, the cause of which is more or less appreciable.

SERIES I.—*Mechanical or chemical irritations arising from the exterior.*—The most decided causes of peritonitis, in men, are blows from large or heavy bodies on the parietes of the abdomen, or falls on that part, especially on some prominent object which depresses the muscles of the abdomen; gradual or sudden pressure which occasions a friction of the serous surfaces, for example, when a wheel of a carriage passes over the abdomen, or it is trampled upon by men, horses, &c. The effects of a contusion are sometimes sensible in this membrane alone; or else if the viscera participate in it, their tissue recovers, whilst that of the peritoneum, as well as its function, remain injured. General commotions which depend on falls are sometimes especially directed on the peritoneum, and may equally establish a permanent focus of irritation in it.

Hæmorrhages are often the result of the action of this first series. Dry, red inflammation, that is, with but little fluid exudation, with membranous products and intimately organized adhesions are most generally the effect of it. All these alterations take place very slowly when the subject is healthy, vigorous, and little subject to aberrations of the capillary actions.

The chemical irritations which I have arranged in the same category, are seldom met with except in animals; in whom peritonitis may be induced by the injection of more or less irritating fluids into the cavity of the abdomen. Bichat has ascertained what liquids were the most difficult of absorption, and which most readily produced phlogosis. This mechanism is often made use of in surgery for the cure of hydroceles. Some physicians have proposed it, to obliterate by a general adhesion, the sources of certain ascites, arising from a want of equilibrium between the exhalation and absorption. If this idea were put in actual practice, a peritonitis would result from it.

Peritonites from the action of a penetrating foreign body of any kind, are also produced in the manner here indicated.

SERIES II.—*Mechanical or chemical irritations whose source is in the individual.*—To this cause must be referred the friction and pressure caused by the great development of the uterus in pregnant women, in those who have a mole or any other foreign body in the tissue or cavity of that viscus. The tumefaction of the ovaries, the extraordinary cysts which fill the abdomen, and all swellings which elevate the serous membrane, and which in displacing it stretch the tissue which unites it to the subjacent parts, enter into the series of causes. We must also include under the same head, violent and long-continued exertions, the chills of intermittent fevers, when the abdominal viscera, and especially the spleen, are suddenly swelled by the centripetal motion of the fluids, the violent and repeated contractions of the muscles of the abdomen and stomach in vomiting, whatever might have occasioned it, the stretching, compression, and friction in cases of constriction of the rectum and colon, in obstinate constipations, in contractions or strangulations of the intestines, and in hernias.

The *chemical irritants* whose source is in the individual, are effusions of fluids that are not susceptible of being entirely absorbed, or which are incessantly poured out, as the bile and chyle; which may be extravasated by a rupture of their ducts; blood, whose coagulum always forms a foreign body, although the serosity may be absorbed; stercoral matters and air, in cases of spontaneous perforations of the digestive canal; the urine, whether effused by a rupture of the bladder, or exhaled by the capillaries of the peritoneum, which is not impossible; finally, the serosity itself, especially when it is imbued with stimulating properties, as happens when the peritoneal exhalation takes the place of the urinary and cutaneous excretions in subjects in whom it is acrid. The pressure and distention which the peritoneum undergoes from the weight of the fluid, when the patient is endowed with vigorous muscles, and takes exercise or makes exertions, are also, it cannot be doubted, a very powerful cause of the consecutive inflammation of this membrane.

SERIES III.—*Organic actions depending on a derangement of the functions, the cause of which is more or less appreciable.*—1st. When peritonitis takes place in a subject generally or locally predisposed to it, as in lying-in women; when it oc-

curs during the continuance of an intermittent fever, the chills of which are often accompanied with a pain in the abdomen, or a deep-seated one in the left hypochondrium, when it appears in consequence of rapid running, exertions, hard riding, &c. in all these cases it may be presumed that the organic action which presides over the secretion, being increased and depraved by the immediate irritation, is converted into a true phlogosis.

2d. But there are circumstances where this inflammation is suddenly developed, or is not perceptible till it has reached the chronic state, in which even in retracing it to its commencement, we cannot discover a local cause. Thus it is known that atmospheric cold acting on the whole body, immersion in cold water, wet clothes, prolonged coldness of the feet whilst no exercise is used, and a damp state of these extremities, are causes of peritonites. It is probable, that the mechanism is here likewise the same, *the conversion of an increased organic action into phlogosis*, except the increased action has been sympathetically determined to supply that of the depurating excretories, whilst in the others, it is produced by an irritation arising from external causes.

It remains to observe whether this phlegmasia often declares itself, from these causes, without the membrane having been pre-disposed to it by one of the immediate mechanical or chemical agents, already enumerated. I propose hereafter to investigate this subject as closely as possible. In the mean time, I will submit some reflexions which suggested themselves from a consideration of the facts I have observed.

It appears probable, and I have already hinted at it above, that the stimulus of the effused matters must concur with the exaltation of the secretory action, in the production of certain peritonites. I will adduce those of women recently delivered, as examples.

When cold, a paroxysm of anger, or any other cause which produces considerable disorder in the nervous influence and in the distribution of fluids, suddenly arrests the flow of the lochiæ or milk in lying-in women, when the pain in the abdomen is several hours subsequent to this event, can we always be certain that the peritonitis is the cause of the change in the direction of the fluids, as has been supposed by some modern writers? It cannot be denied that a multitude of causes may suddenly close the

exhalent pores of the uterus and mammæ. When this phenomenon occurs, there must be an issue, and a speedy issue, for the fluids repelled from their excretory vessels. But, if the capillary constriction which has caused a retrogradation of the milk and lochiæ is equally strong in the tissues of the skin, kidneys, and gastric mucous membrane, is it not possible that the fluids may be poured out by the exhalents of the peritoneum, and that an ascites may be thus produced, as after the suppression of perspiration, before the augmented action of the peritoneum has reached the degree of phlogosis? In this case, the peritonitis which afterwards manifests itself, would be the effect both of the sufferings of the exhalents, little calculated for such a fluid, and of the irritating action of a foreign body, which as soon as it is extravasated, is no longer susceptible of being wholly reabsorbed.

This mechanism is rendered probable by the susceptibility of the peritoneum subsequent to pregnancies, by the acid qualities of the perspiration in lying-in women, by the predominance of an acid mucosity in the diarrhœas which supervene on them, by the deposit in the urine of such women, by the nature of the suppurations to which they are subject, and in which much white pus disposed to decompose and acidify is always to be remarked. It has been observed that peripneumonies, frenzies, &c. usually presented more purulent or lymphatic matter in the bodies of women who died in child-bed, than in other subjects. It is not exactly milk that is exhaled by the peritoneum, for as soon as it is resorbed, this fluid is changed in its composition; but it is its elements, it is a gelatinous and very acidifiable fluid, which then predominates in the economy, which must be expelled from it, and which is very apt to irritate the part on which it effused. Peritonites with effusion, and where the pain is not immediately developed, are then often attributable, partly to the exaltation of the exhaling action, partly to the stimulus of the effused matter.*

* The inflammations of serous membranes may depend on causes, which have directly or indirectly irritated these membranes, on their external or their smooth and exhaling surface, such are all external injuries, which having divided the closed sac, exercise some irritation on its surface, pressure, contusions, and other causes whose details have just been given; but these inflammations are perhaps still more frequently induced by a phlogosis developed in the interior of viscera covered by a serous membrane. Thus pleurisy often commences by a catarrh of the bronchiæ, frenzy by a moral affection, or an

Development and characteristic symptoms of phlegmasiæ of the peritoneum.

The commencement of ordinary acute peritonitis is similar to that of all the phlegmasiæ; chill, heat, pain of the affected part, pyrexia proportionate to the sensibility, force and degree of plethora of the patient.

The ulterior progress of the disease, when it is well characterized, is sufficiently known for me to dispense with detailing it. I will therefore occupy myself only with those forms of peritonites, that appear to me least understood.

The usual characters of acute peritonitis, which are, local pain, tumefaction, and heat, are not always found united. That which is most commonly wanting, as in all the inflammations of membranes, is heat. The peritonitis will not be the less verified if the pain unites certain characters, and coëxists with certain alterations, which we shall notice.

The tumefaction can only be sensible when the intestinal canal is dilated by the disengagement and accumulation of gas. This phenomenon does not take place in all subjects. Perhaps it is peculiar to those who are weak, or who have a point of irritation in the interior of the canal, to those in whom mucus and fæces abound on the intestinal mucous membrane, as in women in childbed, debilitated individuals whose digestion is bad and in whom a principle of continued fever exists. It is certain, that strong, muscular, dry, irritable men, may experience a very violent inflammation of the peritoneum without there being any tumefaction of the abdomen.

excess in wine, whose irritation is transferred from the gastric mucous membrane to the cerebral pulp, and finishes by fixing in the arachnoid. It is the same with peritonitis, which sometimes commences by gastro-enteritis, sometimes by cystitis, as after the opération for stone, and almost always by metritis after child-birth. Finally, inflammations sometimes only reach the serous membranes, after having traversed the muscles, and the fibrous and cellular tissues of the locomotive apparatus. This takes place, in my opinion, whenever plegmasiæ of the serous tissues succeed to rheumatic irritations: pericardites also appear to me to equally succeed to irritation of the thoracic parietes, and that of the muscular tissues of the heart; finally, the inflammations of synovial membranes, are frequently, it appears to me, preceded by an irritation, which from the skin being affected with cold, is transmitted to the cellular, fibrous, and ligamentous tissues that surround the capsule. As to cases where phlegmasiæ of the membranes are the effect of a sympathetic influence, it is not easy to verify the route that the irritation may follow to reach their exhaling surface.

The accredited pathognomonic symptoms of peritonitis may then sometimes be reduced to one, *pain*. As regards the nature of this pain, it is necessarily fixed, but it may be general or circumscribed in the cavity. It must be continued; it is met with, obtuse, lancinating or cutting, according to its degree, but seldom twisting, and resembling tenesmus; it is augmented by pressure, at least when this is made on the flanks. It increases in the evening. It arrests the alvine excretions. It may be conceived, that these are impossible, when we remark, that all the efforts to evacuate the bowels or to urinate, as well as the shocks from coughing or sneezing, are insupportable. Vomiting, although painful, generally coincides with those symptoms.

Such are the changes which this degree of phlogosis of the peritoneum occasions in the functions of the abdomen.

The sympathetic troubles which may concur in characterizing this acute peritonitis are :—

1. *In the nervous apparatus, and the muscles of locomotion.*—Anxiety, dejection, alteration of the features. When the pain is excessive, the most outrageous delirium, sleeplessness, and extreme agitation; then the patient forgets the original pain. The aberration of mind may be only transient or periodical; in this case it corresponds to the evening exacerbation. It may be calm and serious instead of being noisy. All these shades depend on the temperament, the degree of strength, and the nature of the pain.

When the peritonitis becomes fatal, sometimes the pain ceases, and the patient expires in a perfect calm; at others, he dies in a state of somnolency or coma, generally without a struggle. Trembling and convulsions are in a direct relation to the pain.

2d. *In the respiratory apparatus.*—Nothing remarkable except a difficulty in dilating the chest, resulting from the pain in the abdomen.

3d. *In the circulatory apparatus, and the excretions.*—The pulse, if it be not accelerated with heat of skin, is always contracted and concentrated. It is sometimes observed very slow, and only becomes accelerated on the approach of death. The skin is necessarily cold. There is a kind of perpetual chill.

The hæmorrhagic peritonitis has appeared to me to have as a peculiar character: 1st. More terrible pains, and consequently more violent agitation; 2d, intervals of relaxation, with symp-

toms of an internal loss of blood, these are smallness of the pulse, coldness of the extremities, paleness, and premature alteration of the physiognomy.

When these fearful symptoms manifest themselves early, without a burning heat and an anterior inflammatory state leading to the supposition of gangrene, hæmorrhage appears to me probable. The circumstance of the individual having had a fall, and being in the habit of being bled, augment the probabilities.

If the hæmorrhagic irritation is protracted, it becomes confounded with chronic peritonitis.

Such are the symptoms of acute, painful peritonitis; that which is not so, is recognised with much more difficulty. Fever is generally wanting in those degrees of irritation which are incapable of permitting a reference of the pain to the affected spot. A sudden meteorism, with suppression of the alvine excretions, is all that remains to give a suspicion of the invasion of these kinds of peritonites; but I presume that they are never met with of this degree, except in debilitated individuals, in whom sensibility is blunted by another disease. It is in these cases that lateral pressure may procure some information: I have always remarked, that it was more painful than the perpendicular, and that oftentimes the point of sensibility corresponded to the epigastrium.

Progress and terminations of phlegmasiæ of the peritoneum.

The progress of peritonitis towards the chronic state, offers several varieties corresponding to the degree of intensity.

I have never seen very painful and very febrile peritonites protracted beyond the medium term of acute inflammations of the fasciculi of sanguine capillaries, viz. ten to twenty days. I have remarked that when the disease did not yield in this space of time to an appropriate treatment, it always terminated by a speedy death. I have never seen this phlegmasia pass from a violent state to that of calm and supineness, after having passed through all the gradations of the acute stage, as is often observed in phlegmasiæ of the chest, and in phlogosis of the abdominal mucous membranes. Of the peritonites I have met with in the chronic state, some had only been painful during three days at most; others, and the greater number, had commenced in an insensible manner; the patients had observed scarcely any thing

except some transient and even unsettled pains about the probable time of the invasion of the disease. When the phlogosis has arisen from a contusion, the symptoms often appear violent at the moment of the accident. This appertains to other lesions than those of the peritoneum.

In whatever manner the peritonitis has commenced, it cannot remain long without terminating, if it does not become so indolent that it cannot keep up a well-marked hectic fever.

The symptoms which characterize this form are—a constant sensibility of the abdomen, which sometimes is not perceived till it is pressed upon; a slight tumefaction with renitence, more remarkable in the evening and after a certain time; an obscure fluctuation which is more marked from day to day. Percussion used to distinguish it is painful, but this pain is sometimes felt in the epigastrium only. Slips of the foot, concussions, riding on horseback, coughing, and sneezing cause pain in the abdomen; sometimes the appetite is preserved, and the digestion is regular: which would lead to a presumption that the gastric peritoneum is still but little implicated. When it becomes much so, vomiting may take place; but this symptom is not pathognomonic of latent chronic peritonitis. The sensation of a ball which revolves in the abdomen and appears to mount towards the throat, has appeared to me to correspond to the agglutination of the intestines, which form with the engorged mesenteric glands a round, moveable mass in the abdominal cavity, often without an effusion of fluid.

The sympathetic lesions are of little consequence, some frequency of pulse, without heat, and which is generally only sensible in the evening; dyspnœa and cough, greater in a horizontal than an erect posture, and always proportionate to the volume of the effused fluid; the urine scanty and passed with more and more difficulty; finally, the alteration of colour, and the œdema of the pelvic extremities, when the disease has lasted a long time and death approaches, are the principal lesions.

Peritonitis may also be still more obscure, and be confined to a mere tumefaction of the abdomen, which usually coincides with the constipation. Thus every idiopathic ascites which persists, should cause a fear of phlogosis of the peritoneum, at least of a

consecutive character; but there can be no doubt of it, where habitual sensibility of the abdomen is joined to it.

Primitive and simple ascites, when it does not depend on a rupture,* &c. always indicates a permanent irritation of the peritoneum; but ascites accompanied with universal œdema does not exclude the possibility of this irritation, when these two lesions are observed to be persistent in a patient who has not been debilitated by another disease, because the perversion of action which directs the serosity towards the cellular and serous tissues cannot be constant, consequently when it lasts it may be taken for granted that the cellular effusion is only a sympathetic effect. (See the case of Boulard, Case 49.)†

Chronic peritonitis never terminated under my care except by death.‡

The more obscure chronic peritonitis is in its early stage—the less predisposed the patient is to the disease, the greater the strength of his constitution, and the less lymphatic and sensitive he is—and lastly, the fewer its complications—the longer appears to be the time which this affection will require to conduct the sufferer to the tomb.

Death occurs in different modes. Some patients expire in marasmus, others in dropsy; but without fever and with very little pain, oftentimes after several years of disease. More frequently the peritonitis, exasperated by some foreign irritation, or even without this, suddenly becomes painful, febrile, and assumes the characters of an acute phlegmasia. This exasperation is violent in proportion to the strength of the patient, that is, it supervenes sooner. It usually lasts a shorter time than primitive acute phlogosis. It extenuates the body in a very short time, removes the dropsy, if there be any, and sometimes even the ascites, and terminates by a violent death, or by a *collapse* which precedes the extinction of life a few days. The death is generally sudden, and without rale or agony.

* For example, of the gall-bladder, urinary bladder, &c.

† It is not perhaps sufficiently proved that the surface of the peritoneum can exhale a fluid capable of afterwards phlogosing it; nevertheless analogy may lead to a belief of it, since the mucous membranes and cellular tissues often engender fluids which augment their irritation.

‡ I have some examples of cure since 1808. (Note to the second edition.)

Complications.

Cerebral.—I have no doubt that the excess of the pain in acute peritonitis, is capable of disorganizing the brain by a too impetuous afflux of blood into its capillaries, and that after much suffering, the delirium, convulsions, and coma, are frequently the effect of the disease of the brain itself. The injections and reddish and turbid effusions I have met with render this mechanism more than probable. Perhaps even the irritation is communicated from serous membrane to serous membrane.*

Pectoral.—The most common is pleurisy. It is to be recognised by its peculiar symptoms; but care must be taken to avoid confounding painful stitches of the diaphragmatic portion of the pleura with such as are seated in the diaphragmatic portion of the peritoneum. This error may be avoided by the touch, and by an examination of the disordered functions. The intercostal pain on depression, and the obtuse sound, should lead us to refer the irritation to the pleura. The origin of the pain in a point really abdominal, the sensibility of the abdomen on pressure, especially on the flanks, should lead us to regard the peritoneum as the seat of the disease. Cough and dyspnœa indicate the pleura; constipation and vomiting, the peritoneum. These distinctions only apply at the commencement; for often, during their progress, these two diseases unite, whichever may have been the first established. Then the febrile action is more marked, because the pleurisy more frequently produces fever than the peritonitis.

When the irritation penetrates to the parenchyma, the frequency and consistence of the pulse, the cough with expectoration and redness of the cheeks indicate it to us.

The irritation of the serous membrane of the heart becomes probable when the pain corresponds to that region. We may observe much agitation, anxiety, a feeble and irregular pulse, great debility, or a tendency to lipothymia.

Gastric.—Vomiting appertaining equally to peritonitis as to

* This is void of sense; for this communication can only take place through the medium of the nervous substance. But they were pleased, in the ancient medicine of France, to admit inexplicable, marvellous sympathies from analogy of tissue, without recurring to the nerves as a medium. I gave into this error like many others.

gastritis, cannot be regarded as a certain sign of irritation of the mucous membrane of the stomach. Nevertheless, if irritating substances alone are rejected; if this symptom corresponds to a slightly painful phlogosis of the peritoneum, or if it occurs at a late stage, it may be presumed that the mucous membrane is either inflamed primarily or by the partial progress of the peritonitis, which produces eschars through the whole thickness of the viscus.

Diarrhœa is not produced by violent acute peritonitis in a strong subject: 1st, if therefore it exists under these circumstances, it may indicate phlogosis of the mucous membrane, as has been seen in Pierrot, (Case 48;) 2d, when it is permanently established in the indolent chronic stage, it is a proof of this phlogosis; 3d, when it only makes its appearance in the last exacerbation, at an epoch when the exhausted patient is no longer susceptible of a violent erethism, it is probable that it is only the effect of the disease of the peritoneum, which moreover often communicates with the mucous membrane.

The coincidence of this lesion causes more agitation of the pulse; gives a more unfavourable tint to the complexion, hastens exhaustion, marasmus, and dropsy, and causes fetor of the excretions.

Perforation of the intestines, a rare effect of the two phlogoses, may be presumed from a sudden and extremely acute fever, with burning heat, insupportable fetor, horrible pains of the whole abdomen, even without pressure. When these manifest themselves suddenly in a man languishing under an almost indolent peritonitis, perforation is extremely probable.

Organic Alterations.

Acute peritonitis, when it becomes fatal, has presented to me, and likewise to M. Bayle, 1st, redness and thickening of the serous membrane, and eschars from space to space, which penetrated even to the mucous coat; 2d, a solid exudation, resembling a false membrane, serving as a mode of union between surfaces, and always unorganized; 3d, a liquid exudation, sometimes turbid, sometimes limpid or reddish. Moreover I have met with red clots, of different thicknesses, spread over the red and thickened peritoneum, in the form of a false membrane, and even without there being any liquid and free blood; a fibrinous layer appearing to be the coagulum deprived of its colouring matter,

which was floating in the serum; and finally pure blood. When the sanguine effusion was considerable, the peritoneum did not appear either indurated or rugose, it was only injected, developed, and gave out red drops on pressure. When only a fibrinous layer existed, partly discoloured, as in Maigrot, (Case 44,) the peritoneum was harder and thicker. This led me to conclude that the effusion had taken place slowly, and consecutively to the phlogosis.

Do all the acute peritonites which are followed by a return to health, terminate by organized adhesions? Dr. Baillie affirms so without hesitation; he even adds, that "the time which is occupied in the change of the coagulable lymph into the membrane of adhesions is not very long; for I have had several opportunities of tracing the gradual progress of the change from the one into the other, while the inflammation appeared to have been recent. This membrane consists of a cellular substance, similar to the general cellular membrane of the body, and has a moderate share of vascularity. It does not naturally show many vessels large enough to admit the red globules of the blood; but it shows its vascularity upon slight degrees of inflammation, or when its vessels have been filled with the fine injection. This membrane is capable of elongating gradually by the motion of the viscera upon themselves so as ultimately to be attended in general with very little inconvenience."

Not having had an opportunity of opening the bodies of subjects, formerly affected with a well-marked acute peritonitis, and carried off by another disease,* I cannot offer my experience in support of that of Dr. Baillie. It however appears to me that true peritonites can only be cured by the organization of the humour which exudes on the phlogosed surfaces; but I cannot deny the possibility of adhesions from pressure; since they are so often found in the pleura, they ought also to form in the peritoneum. The immobility of the surfaces permits them to adhere together. In this case, the fluid which ought to bathe them serves as a medium of union. Why does it not become organized, then, as well as when phlogosis exists? And if the pressure is diminished, and the motion of the viscera becomes more easy, why do not the adhesions become relaxed at the expense of one of the two membranes, or of their

* I have now numerous examples of it.

most superficial portions? This is my opinion respecting those adhesions so continually found in the bodies of those who have long suffered from voluminous tumours in the abdominal cavity.

The adhesion of serous membranes may then be the effect of phlogosis; but it is not an irrefragable proof of it.

Protracted peritonites have presented me with all the disorders of the acute stage, without excepting the red clots and abundant sanguine effusions, which are then consecutive, and often the cause of death. I have observed, moreover, that the purulent effusion was more abundant, more charged with white matter, or the detritus of the membraniform exudation; that this was thicker, and more analogous to old cheese; that the peritoneum was more thickened, less red, and sometimes black; that its tissue was studded with small depots of white, or as it is called tubercular pultaceous matter; which only appeared to be covered by a single transparent lamina; that the post and inter-peritoneal tissue was thickened, lardaceous, and tubercular, which sometimes gave several inches of thickness to the mesentery and omentum; that in this lardaceous tissue, tubercular glands were to be met with especially those of the mesentery; that the colo-gastric omentum was collected along the great curvature of the stomach in the form of a ligamentous band; finally, I have observed a species of vesicles resembling hydatids, formed by a collection of the most limpid serum, under a transparent lamina which it had separated from the tissue beneath.

These alterations of the peritoneum and of the tissue which unites it to the viscera, appear to me to be more peculiar to such phlogoses as have produced effusion, because the effusion is opposed to the progress of the organization of the solid exudation, and hence perpetuates its own cause.

Slender, lymphatic individuals, debilitated by disease, those especially whose central capillary tissues have been injured by intermittent fevers, are most subject to tubercular disorganizations.

The production of a well-organized tissue, which has been observed by M. Bayle in chronic peritonites, has appeared rare to me; I believe that it is peculiar to well-formed individuals in whom the lymphatic system is energetic, and I think that repose and an appropriate treatment might favour it; by preventing the irritation from persisting in such a degree as is capable of conti-

nally keeping up the effusion, and of breaking down and dissolving the exudation at the time it is about to become organized

As to other lesions which I have not seen, but which have been observed by Dr. Baillie, such as cancerous tumours attached to the mesentery, steatomata, free hydatids, I will not undertake to speak of them. But these cancerous tumours recal to mind some cases which I formerly separated from peritonites, because the disease did not implicate the external layers forming the exhaling surface. In since reflecting on them, I have thought that it would be very useful to arrange such alterations as arise behind this membrane, and in the tissue it embraces, and which unites it to the adjoining parts, with those of the free surface, and this consideration determines me to now give every thing I am in possession of respecting these kind of lesions.

CASE LVI.—*Extraordinary development of the post-peritoneal cellular tissue, with lardaceous state and ulceration.*—

Milon, aged twenty-five years, soldier in the ninety-second regiment, dark complexion, chestnut-coloured hair, fine figure and complexion, with a robust constitution, having all the systems in a just proportion, came under my notice when I took charge of the hospital of Nimeguen, in Germinal, an. XIII. He was in a marasmus, whose cause appeared to be seated in the abdomen, which was somewhat elevated and sensible. He stated to me, that whilst making a forced march nine months previously, he suddenly experienced pain in the abdomen. It increased from day to day to such a degree, that Milon was obliged to enter a hospital. As this pain very little altered his functions, his disease was treated as chimerical, and no remedy was applied to it for more than two months; afterwards something hard and large having become obscurely sensible to the touch, he was treated for an obstruction, but still without any alleviation. Whatever it was, I observed the following symptoms during the last two months of his life, which passed under my eyes.

The abdomen was somewhat elevated and uniformly renitent. It could not be depressed without occasioning an obtuse, deep-seated pain; but when it was not touched, the patient experienced no inconvenience. All the local symptoms were reduced to this, for Milon had never had either diarrhœa or colics; he had

a voracious appetite, and digested perfectly every thing he eat. The digestive function preserved this energy until the eve of death.

As to the state of the system in general, very little was to be seen; the pulse was small, feeble, and slightly frequent; it became somewhat accelerated in the evening, and there were pretty copious sweats during the night.

The marasmus visibly increased; it had reached such a degree when the patient died, that nothing but very small, pale fleshy bands remained attached to the bones. He was always gay, and full of hope, never suspecting the fate that awaited him.

The eight last days of his life, he began to experience some dyspnœa, a little cough, and the face appeared flushed, especially in the evening. The pulse became constantly accelerated, and the heat of skin increased. Such were the last efforts of almost exhausted nature; they failed the 12th Prairial, and Milon ceased to exist as tranquilly as an old person in the last stage of decrepitude.

AUTOPSY.—The *head* presented nothing peculiar. *Thorax.* The right lobe was healthy, and without adhesions. The left contracted, and reduced to a very small size by the development and elevation of the abdominal viscera. This lobe adhered on every side by very solid cellular productions, (adhesions from pressure.) The parenchyma gorged with blood, easily torn, crepitant throughout, except in its lower quarter, where it appeared hepaticized; no purulent abscess. *Heart* contracted, flabby. *Abdomen.* This cavity was the seat of the greatest disorder. At the first glance, there was to be seen, a solid, lardaceous mass, of a yellow colour, studded with black spots, presenting the appearance of granite, and filling the whole abdominal cavity. A scrupulous examination demonstrated to us* that it was formed by the development of the tissue which unites the peritoneum to the parts which it surrounded, and of that which was contained in the different folds of the membrane.

* This dissection was made by M. Treille, then surgeon in the same regiment, (the 92d,) It is to his skill, his patience, and that ardent desire for instruction, which he demonstrated for three consecutive years, that I am indebted for the anatomical details given in this case, and in that of Renard, which will soon follow.

In the first place, that which united the peritoneum to the muscles of the abdomen was at least an inch thick over the whole extent of the parietes. Having then proceeded to the dissection of the great mass, we recognised that it was divided into two portions, the anterior of which was moveable, and the posterior fixed. The first, which extended from the great curvature of the stomach to the pelvis, resembled a large cushion, of about two and a half to three inches in thickness. It was formed by the development of the cellular tissue of the great omentum. At its anterior, inferior part was a hollow ulcer, filled with a blackish, ichorous matter, loaded with fatty and lymphatic flakes in a state of putrefaction. The parietes of the ulcer were perpendicular, unequal, rugose, callous, and blackish, having the aspect of a cancer, which it also resembled in odour. This abscess had the form of a crescent, whose convexity was turned towards the pubis. Its length was from eight to nine inches, and its breadth from top to bottom was three. The portion of peritoneum appertaining to the parietes which covered it anteriorly was not disorganized; it was as smooth and as thin as the rest.

When the tumour was raised up and turned over on the breast, we convinced ourselves that the ulcer had not perforated it. The remainder of the mass was formed at the expense of the intermesenteric tissue, prodigiously thickened and reduced to the lardaceous state. The intestines were in almost a natural situation; the portion of peritoneum which lines their anterior part was in place, doubtless because the tissue that unites this membrane to the muscular coat had not yielded to the effusion, we were able to raise the whole intestinal canal without tearing it; which demonstrated to us that its three membranes were sound as far as its posterior face, where the two mesenteric laminæ usually separate. The intestines, when disengaged from the mass, left a furrow in it resembling the various convolutions of the bowels. We were then enabled to make a close dissection of what remained; the results were:—

1st. That the tumour was formed by the accumulation, in the post-peritoneal cells, of a fat substance, in some places yellow, and in others white like tallow,* and of a gelatino-albuminous humour, much thinner and black, which gave rise to the mottled

* This is the encephaloid of Dr. Laennec.

appearance spoken of;* 2d, that the cells were reduced to an extreme tenuity, and the whole thickness of the peritoneum was so dilated and attenuated that it had lost its organization as a serous membrane. It was supposed that it had furnished the last smooth and transparent pellicle which circumscribed the free faces of the tumour; hence this membrane had not suffered from inflammation; 3d, that no inflammatory point, no suppuration, no sanguine injection, except the ulcer in the omentum, were to be met with in the whole extent of the engorgement; 4th, that the lymphatic glands of the mesentery were engorged and developed, but not tubercular or suppurating.

The body presented no other traces of infiltration except in the scrotum; it had no unpleasant smell. The liver, spleen, bladder, and kidneys, were in a healthy state.

Observations.—Here is a disease of the post-peritoneal tissue. The disorganization it left was a lardaceous engorgement, similar to those which generally precede cancerous degenerations. The ulcer which was developed in the midst of this mass had all the appearances of cancerous ulcers; its pus was fetid, and nevertheless the portion of the abdominal peritoneum which corresponded to it was not altered.

It appears to me that the accumulation of blood in the mesenteric capillaries, and the excessive and sudden erection of these vessels, resulting, 1st, from its abundant afflux; 2d, from the difficulty of its return to the general mass through the parenchymata of the liver and spleen, during a forced march, gave rise to an extraordinary exhalation of the lymphatic fluid† in the areolæ of the post-peritoneal tissue. The absorbents of these areolæ were not able to take up the quantity of fluid poured out. These fluids forced and distended the cells; they became absolved from the laws of living chemistry, and entered into such a combination that they were no longer susceptible of being absorbed; they invited towards them the recently exhaled fluids, and thus finally formed an enormous mass, which deteriorated the assimilating action of the viscera of digestion, and that of the lymphatic glands, and induced a fatal wasting away of the patient.

It is probable that Milon died from want of nutrition, since neither the fever nor the pain were of sufficient intensity to

* The melanosis of the same author.

† This is sub-inflammation.

abridge his days. The pain was scarcely perceptible; the fever only appeared when a point of irritation was established in the lungs, an irritation which was perhaps the effect of the pressure. But it must also be observed that all the nutriment he took must have been absorbed, as there was neither diarrhœa nor vomiting. This enormous engorgement did not then prevent the action of the lacteals. The development of their glands was not, then, an obstacle to the passage of this fluid. Some peritonites with tubercles of the mesentery have induced us to come to this conclusion, and to call in question the cause of many lenteries.

If Milon was not worn out by pain, by hectic fever, or by a loss of fluids, disproportionate to the introduction of articles of nutrition, what then was the cause of his death, since these are generally the causes that induce marasmus? Let us wait to answer this question till we are better acquainted with the different kinds of death. I will however ask if the marasmus might not have mainly depended on the state of constraint in which the digestive organ was placed, as its peristaltic action became more and more difficult. Was not the immobility in which it was kept, the torpor it must have experienced in the midst of a lymphatic engorgement which had destroyed almost all the sanguine vessels, sufficient to prevent it from properly performing the first operations of the individual living chemistry? It was in vain that the chyle was absorbed; it had not the conditions which rendered it susceptible of complete assimilation; it was not sufficiently nourishing. The body must therefore have gradually wasted away.

We cannot also mistake another cause of consumption in the continual extravasation of the nutritive materials, which a lymphatic centre of fluxion incessantly invited to the post-peritoneal tissue. But is this cause sufficient to induce marasmus? Does not something analogous take place in certain partial obesities which are not always fatal to the individual?

The cancerous ulcer, or having that form, which was found in the epiploïc mass, was analogous to those which supervene in all lardaceous degenerations. I attributed it to the decomposition of the white fluids, partly withdrawn from the laws of vitality, which occasioned that of the solids, equally deprived in great part of their organic action. Their torpor prevented them from pouring much pus into the circulatory stream, which

would have produced hectic fever, but likewise the want of air, the universal agent of decomposition, did not permit this pus to become as putrid, and consequently as irritating and fitted to form a hectic fever, as if it had been situated on a surface communicating with the atmospheric air.* None of my cases have yet appeared to contradict this doctrine, which I adopted at the very commencement of this work. The purulent resorption, therefore, but slightly contributed to the extermination and death of the patient under consideration.

The alteration of action in the post-peritoneal tissue is readily explainable by an accidental plethora and a sudden capillary erection which caused a flow of liquids into the areolæ, but could not these, by an analogous action, have been excreted into the cavity of the peritoneum, or into the areolæ and cavity at the same time? Is it not to a similar mechanism that those hæmorrhagic peritonites are owing, which we have seen, as having caused the tissue under consideration to become ecchymosed and considerably developed? Does not the only difference exist in the product, that is, does it not merely depend on the degree of morbid action which one time obliges the capillaries to pour out pure blood, and at another confines itself to making them exhale more white fluids than usual?

All the comparisons we can make, tend to strengthen this physiological fact. If acute phlogosis causes a red injection of the post-peritoneal tissue, chronic inflammation causes a white, and renders it lardaceous, as it was in *Milon*. (See Case 45.) Pericarditis injects the tissue, by which the serous membrane is united to the heart either with blood or lymph. Acute inflammations of the skin, for example, scarlatina and measles, redden and ecchymose the subcutaneous tissue; and chronic inflammations of this membrane, as hepatic ulcers, elephantiasis, and *crustea lactea*, inject this tissue with coagulable lymph, and give it a lardaceous appearance.

Moreover, if it is wished to examine the subject more closely, it will be found that, in a multitude of cases, the morbid action is transmitted to the tissue which unites the membranes, before

* If it had been as acrid as that of external cancers, would it not have phlogosed the portion of the peritoneum of the parietes with which it was in immediate contact.

implicating the membranes themselves, and that it attacks them only, by developing them and reducing them to very thin cellular laminæ, as took place in the peritoneum of Milon. These kinds of introversions must be rare, as the capillaries of membranes are almost every where endowed with more vitality than those of the tissue which attaches them to the subjacent parts. Nevertheless, the skin furnishes us with examples of it, because the subcutaneous tissue is very active, and habitually exposed to capillary erections, closely allied to phlogosis. Does not the sanguine injection in phlegmon, commence in this tissue, and is not the skin rendered thinner consecutively? Do not cold abscesses,* scrofulous and lymphatic engorgements, present an analogous chronic state, in which the organic action, modified so as to approach more or less to phlogosis, fills the areolæ and interstices of the tissue with lymph, fat, &c. before implicating the skin, which it ultimately reduces into cellular laminæ?

Next to the skin, the peritoneum is 'the' membrane which adheres to the subjacent parts by the most lax tissue, and one most susceptible of capillary erections; hence tumours of the omentum are not rare. But Milon's disease only differed in the morbid action having attacked the whole extent of the tissue.

The causes that produce peritonitis may then sometimes determine these lardaceous developments.... I do not hesitate to affirm it. In the first place, the case we have just perused was of this character, since it was induced by a forced march. I have met with another, quite as considerable, which took place during an intermittent fever; this was also at Nimeguen. I am in possession of no details respecting the patient who was the subject of it; I merely find in my notes that he died with a tolerably active hectic fever, and that the induration contained several abscesses, in which the excrements appeared mixed with pus. But not having examined the other viscera sufficiently, I am afraid to draw any particular inferences from this fact. It was the first time a case of the kind presented itself to me. I yielded to the repugnance inspired by the sight of an abdomen transformed into a hideous and infectious cloaca, the more readily as I had not seen the progress of the disease, which terminated the very day I took charge of the hospital of Nimeguen.

* The French call those abscesses *cold*, which are preceded by but slight inflammation of the sanguine capillaries.—TRANS.

The third and last case of this kind, that I collected, is the following, which I can give more in detail.

CASE LVII.—*Dry phthisis, with lardaceous engorgement of the abdomen.*—Renard, aged twenty-four years, soldier in the ninety-second regiment, light hair, white and transparent skin, rosy complexion, very regularly formed, muscles tolerably large, but not well-marked, contracted the itch a year before his death. He was regularly treated for it in the hospital of Breda. Subsequent to this, he experienced pains in the abdomen, for which he came to the hospital of Nimeguen. These pains, at first vague, became fixed in the hypochondria. The patient having been suspected of having an obstruction, which was apparently indicated from the physician having previously felt some renitence, was treated by diuretics, and soon after regarded as cured. But although the functions appeared to be well performed, he still remained feeble.

During his residence in the hospital, four months before his death, he contracted a cold, which constantly increased. From the same period, the embarrassment and dull pain in the abdomen also began to augment, and Renard gradually wasted away.

On taking charge of the hospital the 12th Germinal, an. XIII. I found this patient already very much emaciated, with a hectic fever, scarcely marked by an evening exacerbation, coughing but little, and never expectorating. The abdomen was somewhat elevated, but renitent, and not meteorized. The patient had neither colics nor diarrhœa. Strong pressure was painful, movements of the body, and exertions, were slightly so. When perfectly quiet, he experienced no suffering.

From the 12th Germinal to 7th Floreal, emaciation scarcely perceptible, no complaints. From 7th Floreal to the 15th, the face emaciated, marasmus rapid, more cough than usual. Anodyne, etherized pectoral drinks. Smiling countenance, full of hope.

From the 15th to the 17th, pains in the abdomen, difficulty of urinating. The abdomen appeared hard, elastic in some places, and much more painful on being touched. Voice trembling, scarcely articulate, last degree of debility and marasmus. Pulse rapid, very small.

The 18th. Comatose agony, after a fall, which he met with in attempting to go to the close-stool. He expired tolerably calmly.

AUTOPSY.—The head was not opened. *Thorax.* Much le-

mon-coloured serosity in the two cavities. Some soft exudation, of albuminous appearance on the pulmonary pleuræ. The right parenchyma contained a tubercle of the size of a pigeon's egg, formed of a mass of white granulations. Around this tubercle was a small carnification, or rather an induration, of a hepatic consistence. The left parenchyma contained many tubercles, but of a small size, and was only engorged. *Heart* natural, the vessels, in general, almost empty. *Abdomen.* Every thing was agglutinated together into a motled mass, of a yellowish-white colour, with yellow, brown, or black spots. Dissection showed: 1st, the whole digestive canal healthy in both its internal membranes, and in that portion of the peritoneum which adhered to its free surface; 2d, the spleen healthy; 3d, the liver yellow, and more voluminous than usual;* 4th, the bladder healthy; 5th, when the intestines were disengaged, as in the subject of the preceding case, we saw that the mass was reduced to the mesentery, the meso-colon, and omentums, all prodigiously developed and enlarged; and in dissecting we found, 6th, that the cellular tissue which unites the peritoneum to the abdominal parietes, and that which embraced the different mesenteric folds, were filled, (in every point where it was lax, for the portion of peritoneum on the free face of the viscera was intimately united to them,) with a lymphatic, brownish, whitish matter, and spherical flakes of fat, the whole enveloped by transparent cells, and which appeared to me to have undergone no other disorganization, except extension and reduction of thickness; 7th, that the free surface of the peritoneum covered the whole of this shapeless mass; 8th, that it preserved its transparency, and was much thinner than usual; 9th, that without being covered with any exudation, it adhered almost every where to itself, by a simple adhesion which was easily destroyed by the finger; 10th, that the mesenteric glands were developed, of a scirrhus appearance, and as if composed of tubercular grains, like the large pulmonary tubercle†; 11th, throughout the whole mass, I was unable to distinguish any trace of blood-vessels.

* Does not this yellow liver correspond to a chronic duodenitis? This was not verified.

† If a similar case should present itself, I will ascertain if some traces of ulceration did not exist in the small intestines, for they are often found, even where the mucous membrane is pale. In fact, I have remarked, that when

Observations.—The disease of the post-peritoneal tissue appears here to be the product of a metastasis of the psoric phlogosis which was first seated in the cutaneous tissue. What were the predisposing local causes that invited this irritation to the peritoneal appendages? We have not data sufficient to conjecture. But we know that the disease was in a soft and delicate tissue, that in these kind of temperaments all repercussions expose the white system to irritation, engorgement, and disorganization.

We see that the lymphatic fasciculi of the lungs were equally affected; but we presume this was only secondary, and that although the whole lymphatic apparatus of the viscera had a tendency to become affected, as is proved by the yellow tumefaction of the liver, that the principal point of determination was to the post-peritoneal tissue.

The smooth surface of the abdominal serous membrane might equally have become the term of the morbid action; this depends on the first impulse given to it. The afflux continues as it began, afterwards the analogous tissues are affected consecutively by that kind of sympathy or irritation of action of which I have spoken so much.* Such are, in my opinion, the general laws of localizations, and metastases, whatever may be their seat or nature.

I cannot, without exposing myself to tedious details, attempt an analysis of the symptoms of Renard's disease; it is by no means difficult to distinguish those which appertain to the lungs from those which are peculiar to the abdominal affection.

What has been perused contains all the cases of diseases of the digestive canal and of the abdominal serous membrane, that I have been enabled to observe and verify by the progress of the symptoms and anatomical inspection. The alterations of the kidneys, the bladder, the liver and its appendage, and the pancreas are not sufficiently known to me, for me to dare to attempt to present a view of them.†

inflammation is developed in the peritoneum, the redness which existed in the mucous membrane disappears, and the traces of the enteritis are less appreciable. A kind of revulsion of the phlogosis then takes place, and it is transmitted from one surface of the intestine to the other.

* The nerves are the medium.

† It is well known that the text of this work was composed in 1808, after three years of observations in military hospitals.

I will endeavour to unite such data respecting the treatment of irritations, whether acute or chronic, of the peritoneum, as have appeared the most rational.

CHAPTER VI.

TREATMENT OF PERITONITIS.

FOR modifying the inflammation of serous membranes, we do not possess the resource of applying the remedy upon the affected part;* but then general remedies not acting immediately on the seat of the disease, less frequently produce fatal consequences than in the affections of the mucous membrane of the primæ viæ. Hence it results that medicine has much less controul over the phlegmasiæ of the abdominal serous membranes than over the mucous.

Nevertheless it possesses sufficient influence over the former to render it the duty of the physician to learn to appreciate the mode of action of the different means at his disposition, which are to be avoided or to be resorted to. Let us endeavour first to determine the principles of the treatment in the acute stage, in subjects who have not been weakened by another disease.

Treatment of Acute Peritonitis.

The indications of cure reduce themselves, in my opinion, 1st, to removing all immediate irritation; 2d, to diminishing irritation in the suffering part by modifications produced either in the circulatory or nervous systems; 3d, to establish in the circulatory and capillary system of the fluids, a proper degree of action, and to maintain it for a sufficient length of time to permit a cure.

1st. To remove all immediate irritation.

The first care of the physician, in commencing the treatment of a patient, should always be to remove from the suffering part all

* Leeches act more immediately upon the peritoneum than upon the mucous membrane: what is here said should then be applied only to internal remedies.

irritants. An individual, then, affected with peritonitis, should immediately be undressed, freed from all ligatures, and relieved from all foreign bodies which compress the abdomen. As every effort, exercise, or movement increases the friction of the painful surfaces, the most absolute rest should be commanded. Every thing that can excite contractions and convulsive actions should be carefully removed. Emetics should therefore be proscribed from the treatment of peritonitis, unless its immediately irritating action should be beneficially compensated for by some manner of acting very evidently useful to this disease. We shall endeavour to elucidate this hereafter. As respiration is an invariable cause of the friction of the peritoneal membrane, silence should be advised, and we should endeavour to render the breathing calm and infrequent by the means we proceed to point out, as acting upon the nervous and vascular systems.

2d. *To diminish the Irritation in the Suffering Part, by modifying the Circulatory and Nervous Systems.*

As it is impossible to calm the inflammatory pains without *weakening the circulation*, when it is performed with too great rapidity, it will be indispensable to have recourse to this measure in almost all recent inflammations of the peritoneum. As phlogoses of the membranes do not produce a hard pulse except in vigorous and plethoric persons, these will be the only ones in whom general bleeding will be really useful. It should be had recourse to whenever there is a full, frequent pulse, and great heat. When these symptoms are not present, it may be still useful if the patients are dry, muscular, florid, and young, because the excess of the pain may arrest the expansion of the heart: in that case it is always well to commence by a tolerably copious depletion.

But whether a large vein has been first opened, or the want of strength of the patient has required that this measure should not be had recourse to, it is always necessary to resort to local bleedings, even when typhus is feared, except in cases of extreme debility, or of an evident scorbutic diathesis. Leeches appear to me preferable to cups, which are too painful in the acute stage. They may be applied to the abdomen or anus. They appear to me to be most useful when applied to the first named

part, but they may also be very beneficial when applied to the second, and I have seen examples of it. If the patient has had, or appears predisposed to, hæmorrhoids, this mode of bleeding should be preferred to every other.*

Whatever place may be selected for the application of leeches, it is indispensable to take advantage of their bites, and to apply fomentations with tepid water, in order to keep up the flow of blood from them for some time. There are always means enough for arresting it, as soon as the patient is perceived to be too much weakened.

Bleeding is a certain means of diminishing pain, but it alone does not suffice; it is also necessary *to act upon the nervous extremities*, which directly present themselves to the action of remedies. Relaxation is produced in them by the application of cool, mucilaginous, and acidulated medicaments. This modification may be effected in internal as well as external parts. Externally emollient local fomentations are had recourse to; they are of great advantage, but it is necessary to apply them so that the weight of the compresses may not destroy their good effects. Very light ones must be employed, and they must be frequently moistened.

Should they be applied warm or cold? If the heat of the weather is considerable, the skin very warm, and the circulation very active, cold fomentations should be preferred; the patient desires them, and is benefited by them; for this reason they should not be refused. It is the same as regards baths. In this case the fomentations consist of oxycrate, lemonade without sugar, or pure water.

If the weather is cold, reaction feeble, and the patient subject, from his temperament or by circumstances, to repercussions of perspiration, to metastases, to sudden localizations, as females in child-bed, men subject to periodical evacuations, those who have a very irritable chest, all those who readily suffer from atmospheric variations, tepid fomentations and baths must be

* I no longer think so. It is by curing the irritations of the viscera that the return of the hæmorrhoidal flux is facilitated as well as the menses. Besides, peritonitis is too rapid in its progress for time to be lost in revulsive bleedings: it is necessary to act as near as possible to the seat of the inflammation, and to cover the abdomen with leeches on the first appearance of the symptoms: later they might be useless.

preferred; but they should always be of a very moderate warmth. It is sufficient that these topicals do not cause uneasiness and chilliness. It is particularly necessary to consult the sensations of the patient; when he feels comfortable it is because the phlegmasia is beneficially modified.

What we have said of topicals is applicable to *internal remedies*; whichever afford relief should be continued. Thus, sometimes cold lemonade will be preferable to slightly warmed mucilaginous drinks; at other times these latter will be more useful. See what we have said previously, respecting the choice of proper drinks in gastritis, all of which is entirely applicable to acute phlegmasia of the peritoneum. The stomach is often more difficult to please in this latter phlegmasia than in the former.

Opium and antispasmodics may be employed as sedatives during the decline of the disease, when the reaction has entirely ceased, and only some local sensibility remains. They are then useful to diffuse an uniform action; but the external means should be conformable. The narcotic and antispasmodic sedatives are then more useful as modifiers of the circulatory apparatus and of the cerebral irritation, than as sedatives of the nervous extremities to which they are applied.

Very moderate friction of the limbs, slowly and constantly made with the hand or some soft and agreeable body, may produce a sedative effect upon the nerves, and the universal diffusers of sensibility: this modification always tends to destroy the morbid concentrations.

Exciting drinks and solid food are injurious agents, from directly irritating the nervous system, and by exciting painful actions in the digestive canal. We should then recommend the physician here to carefully keep them from his patient. It is evident that purgatives tend, as well as the superabundance of stercoral matters, to excite in the muscular fibres of the intestines an action which only tends to exasperate the symptoms of acute peritonitis. Broths should then be the sole nourishment of the sick,* until the evacuations appear disposed to resume their usual character.

* I was still too much influenced by prejudices; no broths should be allowed so long as there is acute phlegmasia: water slightly edulcorated, or with mucilage, and acidulated, *always* suffice. There is no exception to this rule.

After having quieted the pain and moderated the inflammatory action, it is necessary to attend to regulating the distribution of the fluids.

3d. *To establish in the circulatory and capillary apparatuses a standard of proper action.*

This third manner of modifying the economy is not independent of the two others. It is evident that in calming the pain much has already been done towards rendering the motion of the fluids regular. I have nevertheless thought it proper to make it a principal indication in order to particularly distinguish the means which most directly act in this way, and to connect them one with the other.

After, by the aid of bleedings, the activity of the vessels is reduced to that degree most favourable to the cure of the phlegmasia, it is necessary to solicit the different capillary apparatuses to act sufficiently, to prevent that of the peritoneum being the term of all the vascular actions and the principal rendezvous of the fluids.

We will examine the means proper for attaining this object, according as they act upon the skin, the digestive canal, or the external senses.

1st. *On the skin.*—To maintain this membrane in a temperature which favours its exhalant function, to cleanse it, to mildly stimulate it by baths and frictions, as we have recommended in enumerating the sedatives, constitute the only measures that we can employ to the general surface of the body. But there are some methods of partial excitation which are termed *revulsive*, and which are regarded as the remedies *par excellence*, of inflammation after the vascular reaction has been sufficiently reduced. These will be found enumerated, and their value pointed out in the chapter on the treatment of phthisis.

Such of them as do not divide the tissue of the skin, as rubefacients and vesicants, should never be neglected in peritonitis.*

I believe that they are little useful when applied to the abdomen in the acute stage, when the pains are violent, and the fever

* They are proper only in the most chronic cases.

still high. They can only increase the sufferings, and the most favourable period for the employment of emollient and sedative fomentations is lost. If they are used at this period, it would be better, perhaps, to apply them to the thighs or legs;* but the favourable instant, is after the disease has continued some days, especially when the means recommended have not succeeded in reducing the inflammatory excitement. It is then, in my opinion, that they may be applied with success as well upon the abdomen as to the extremities; but there is little utility in causing them to suppurate.

For this reason, issues which produce suppuration of the subcutaneous tissue, are much less advantageous in acute peritonitis. Perhaps they might be tried before the disease has become chronic, in cases of psoric, or herpetic metastases, especially in lymphatic and not irritable subjects.†

2d. *To the digestive canal.*—Not only diaphoretics, and sudorifics, but also narcotics, spirituous aromatics, and in general all the medicaments termed *antispasmodics*, should be considered as exercising a particular action upon the skin. But a very moderate use can be made of them, and one so regulated that digestion may be not too much quickened or retarded, but only facilitated; it is especially necessary to avoid their producing a febrile excitement, which would become a new stimulus to the irritated peritoneum. An infusion of elder, (*Sambucus niger*,) of red poppies, (*Papaver rhæas*,) of borage, (*Borago officinalis*,) of scabious, (*Scabiosa arvensis*,) which should be taken warm, adding once or twice a day, especially in the evening, twelve or thirteen drops of volatile alkali to a cupful of one of these infusions, some drops of laudanum in a demulcent vehicle, a small dose of opium in the evening, and slightly aromatized potions, or other remedies of the same degree of activity, will commonly suffice.‡

Diuretics of a mild character, must also be selected, being guided in their use by the state of the stomach; squills and white

* It is still better to abstain from them.

† Compare the precepts we have given in regard to the employment of topicals in phlogosis, Vol. I. p. 400, and 406.

‡ The action of the skin reëstablishes itself without these means when the peritonitis is removed.

wine constitute their bases. Frictions to the extremities, with them, may be also had recourse to, when the irritation has entirely ceased, and dropsy is threatened.

Purgatives appear to me to be useful subsequent to the acute stage, when the canal is stimulated by fecal matters retained in it. The oleaginous and muco-saccharine purgatives, must always be preferred, and given in divided doses. Oleaginous enemata will be useful in the same circumstances, when there exists a harassing tenesmus, and local pain from the accumulation of matters in the colon. In the case of Raimbault, (Case 53,) we have seen great relief afforded by whey and cream of tartar.

Some chronic cases require frequent recurrence to laxatives. Their administration should never be postponed when it is believed that the principal disease is aggravated by the accumulation of bilious and stercoral matters; it is sufficient to be well satisfied that they should not be adopted as a curative measure in those obscure peritonites with obstruction, dropsies, and engorgements.*.

I will not conclude what I have to say respecting evacuants, without expressing my opinion in relation to emetics.

Since I have seen peritonitis make its appearance during the *action of emetics*, I cannot avoid believing that the convulsive efforts of the abdominal muscles, and the friction resulting from them, may produce this phlegmasia. My investigations have convinced me, that they must at least assist in developing it, and hereafter I will exclude emetics from the treatment of all diseases in which I shall fear peritoneal irritation.

How then, is it, that Doublet and Doulcet, have based the treatment of puerperal fevers upon emetics?

I will first observe, that a great number of females die, although ipecacuanha is given to them. This is so closely the case, that all those who have treated this disease *ex professo*, have declared that it was more frequently fatal than curable.

* It is the irritation of the mucous surface, especially that of the gastro-duodenal region, and not that of the serous, which excites the secretion of bile. When the sufferings of the peritoneum keeps the intestinal canal torpid, the secretory action of the liver is suspended. To too strongly solicit this secretion, when the digestive canal cannot relieve itself of its contents except by convulsive actions, capable of prolonging the phlegmasia, is then to create an additional obstacle to a cure, to which there are already too many.

Commonly, those only are cured who are but slightly affected. If success attends the treatment of the more severe cases, does not this result rather from the use of leeches, mild diaphoretics, the excretion of milk and the lochiæ, than from emetics? Would not more cures be obtained, if emetics were abstained from in the treatment of the disease of women in childbed? As nature is governed by immutable laws, I venture to decide in the affirmative. Emetics must necessarily be often injurious in individuals whose peritoneum is irritable, whose post-peritoneal tissue has just been stretched, and appears disposed to become the centre of fluxion, since the efforts of vomiting will cause the irritated surfaces to be painfully rubbed against one another, and the violent contractions of the stomach and intestines, will also stretch this tissue, already too sensible, and will repeatedly accumulate the blood in the capillaries which are distributed to it.

The good effects of this medicament in certain cases, may be nevertheless accounted for, by applying to it what we have said of purgatives. If there exists in the stomach an accumulation of irritating articles, which causes pain in the epigastrium, such as a large quantity of bile, or the residue of imperfectly digested food, as often happens in women who abandon themselves to their fantastical appetites during pregnancy, an emetic may be curative, but then it will have cured not a peritonitis but a gastric accumulation. From this mode of operation it has also appeared useful in hospitals during the prevalence of epidemic gastric or gastro-adyynamic fevers; but who will assert that it has not aggravated true peritonites?*

It will be asked whether it is not possible that the antispasmodic and sudorific action of emetics, may induce a favourable revulsion on account of the extreme mobility of the vascular system, and of the disposition to profuse and sudden local determinations and secretions. I confess that a favourable revulsion may be effected, but who can be sure of this? What is much more certain, is, that if the emetic does not alter the determination, it will increase it. We may be convinced of this by reading the cases of puerperal fever with peritonitis; it will be very frequently observed, that the pains of the abdomen are augmented, the meteorism increased, and delirium come on after the opera-

* We know too well at present that it aggravates these pretended fevers.

tion of an emetic. This medicament is then, in this case, truly *anceps remedium*; and to administer it when peritonitis is imminent, is, to use a familiar expression, which I have already applied to the use of perturbing stimulants in phthisis, to play at *double or quits*.

Therefore, I wish that physicians would avoid prescribing them generally to women in childbed, and that they would endeavour to determine with more precision than has yet been done, the cases in which this remedy is particularly indicated, that is, those in which it is probable that its antispasmodic and diaphoretic action will suffice to relieve the peritoneum from the too impetuous afflux of lymphatico-lacteous fluids to it.

It will be asked, what shall we substitute for emetics? I answer, leeches to the vulva, fomentations, tepid baths, frictions, and warm lotions to the extremities, mild diaphoretics, drawing the breasts, and even mucilaginous laxatives when the constipation is not too painful.

3d. *To the external senses*.—All violent passions quicken the circulation of the fluids, disturb the respiration, and cause a sensation of uneasiness and constriction at the epigastrium, and over the whole abdomen, and in all cases augment the tension and mobility of the nerves. Since all these modifications are prejudicial to the course of phlegmasia of the peritoneum, it is necessary to avoid giving rise to them, by presenting to the senses objects which may excite or awaken the passions. We should not forget to exhort patients not to indulge themselves in the contemplation of fancies or recollections which have been the source of too powerful sensations, either agreeable or painful. The passions do not any longer torment those who do not encourage them, when no surrounding objects tend to fatigue their senses.

Such is the general plan of treatment: it appears to me appropriate to all local complications, since it tends to moderate the action of all the apparatuses. That only of adynamic fever has not yet been spoken of. The following is my opinion on this subject: at the commencement, and whilst the irritation is active, the treatment ought not yet to vary, because it is never proper to irritate a patient who is already over-irritated, under the pretext that he may subsequently become weak. When the prostration takes place, a careful examination must be made to

ascertain whether it is not the effect of the pain. The sinking of the pulse, prostration, and somnolency, are not sufficient to characterize an adynamic fever.

These symptoms always succeed to an increase of irritation in the phlegmasiæ which pain is about to render fatal. But when we observe relaxation of the muscles, the subcutaneous tissue flaccid and effaced, great change in the complexion, and fetor of the excretions, and when the somnolence and stupidity may be attributed to a nervous rather than to an accidental collapse, there is no doubt that there exists adynamic fever. Then it is necessary to stimulate, 1st, because stimulants will not irritate too much; 2d, because the continued fever adds to the danger of the phlegmasia; 3d, because that finally even when the two diseases require a different treatment, it is most advantageous to cure the fever, which may be fatal in a shorter period than the peritonitis, which not being then very intense is capable of running on to the acute state.*

Internal as well as external stimulants should be had recourse to, but as soon as the adynamic stupor, which may be only temporary is dissipated, and the system gives evidence of its feeling somewhat actively the impression of tonics, we must be satisfied with articles which afford nourishment, and those which mildly facilitate digestion. But these precautions concern chronic peritonitis of which I now proceed to treat.

Treatment of Chronic Peritonitis.

Is chronic peritonitis curable? This question cannot be answered, except by an unprejudiced and above all patient observer. How often has not the disease been supposed ended when it was only allayed! The cases which I have collected, though few in number, have already furnished examples of it. Before presuming that a peritonitis is cured, it is necessary to be certain that no relapse has occurred during a sufficient length of time. But to decide positively that it has been so, it is necessary to have had

* The reader would do well to pay no attention to this passage. If he reads the note at p. 335, it will recall to him in what manner the gastro-enteritis called *adynamic fever* excites peritonitis; and he will readily conclude from it that the treatment of these two diseases is the same: bleeding at the commencement, demulcents and absolute diet at the highest degree, that of prostration.

the opportunity of making a post mortem examination; it is necessary to see there the means which nature has employed to consolidate the phlogosed parts. If the exudation has occurred during life, as cannot be doubted, it is necessary for it to become organized, and that its serous particles should be resorbed. But for the disease to terminate, it is also necessary that at the period when this organization is complete, the tissue of the membrane should be uninjured. We have almost always found some tubercular depots in the substance of the peritoneum. Is the pultaceous matter which forms them susceptible of resorption? I believe it must be exempt from the action of the absorbents, as well as the small fatty and caseous masses which we sometimes observe in the post-peritoneal cellules. The existence of this matter would then be already a cause of death. Chronic peritonitis will not then be curable, except when the organization of the solid parts of the exudation, and the resorption of its serous fluids will take place in a peritoneum in which the tubercular, fatty, and calcareous productions will not continue to keep up the irritation.

But at what period of the phlegmasia are these noxious matters produced? That will depend, 1st, on the constitution—the more flabby, pale, slender, and irritable the patient, the earlier will they exist; 2d, on the treatment in the commencement of the disease, and on the action of exterior agents—the more the peritoneum shall have been stimulated, either by frictions, exercise, and the contractions of the digestive canal, whether by the too strong action of the circulation which shall have been improperly accelerated, the speedier will be the alteration of the lymphatic fasciculi and the formation of these different foreign bodies. It seems to me that the treatment of the first twenty or thirty days commonly decides the fate of the patient; but I do not conclude that this period being passed, the phlogosis is incurable. The physician should suppose his patient curable until the last extremity, and should lay down for himself a plan of treatment for chronic peritonitis, whatever may be the period at which he is called to the patient. The following is the course which I have pursued, and which appears to me most rational.

When the phlogosis of the peritoneum has not terminated in the acute stage, the degree of the irritation must be examined into: if, although already of long continuance, the disease still

preserves the acute character, the treatment of the acute stage is still applicable to it. The pain in the abdomen must be relieved, and the action of the organs of this cavity rendered as slight and unfrequent as possible, at the same time the skin is mildly stimulated, and those remedies which lull the pain and which sympathetically solicit the depuratory excretories of the economy, are employed. (See the details above.) So long as hectic fever is marked, the nourishment should consist of gelatinous articles which leave little fecal matters.

If the peritonitis has become *entirely indolent* and apyrexia, the treatment should differ, 1st, in this, that the skin should be more actively stimulated by repeated vesicatories, frictions, and baths, especially pediluvæ. Although little is to be hoped from exutories, use may always be made of them, so long as the powers of the system are not exhausted. Perhaps the chronic suppuration of the subcutaneous tissue which accompanies them, is a means of preventing the lymphatic fasciculi of the peritoneal and post-peritoneal tissues from being disorganized, at least it may retard the production of the foreign bodies of which we have just spoken.* 2d. In this, that more active sudorifics and diuretics may be introduced into the stomach than when hectic fever is present; but if they are not promptly efficacious, their use must be discontinued, especially if the strength continues to decrease, because they will not fail to accelerate the progress of the principal disease, and to add to it finally gastritis or enteritis.

Such is also the course to be pursued when the *peritonitis is only presumed* to exist, from the distention of the abdomen and the constipation, or from dropsy. In this last case external diuretics should be employed, such as frictions with tincture of squills or cantharides, whilst the most absolute rest is preserved, and the patient is restricted to mildly diuretic drinks, and food which is nourishing without being at all stimulating, and incapable of causing an accumulation of fecal matters in the intestines.

I have already expressed my opinion respecting the use which should be made of laxatives, which are only the remedies of a transient complication. As to emetics, I proscribe them for ever.

* Moxa is the mean that should be preferred for the production of suppurations.

To relate cases of acute peritonitis cured, is to add nothing to our knowledge. There are no practitioners who cannot adduce many triumphs of this kind. I will relate the following case, however, in order to fix attention to the means which have appeared to be most efficacious in relieving the pain of the abdomen, and because there was in this instance a particular predisposition of the reality of which I wish all practitioners should be convinced.

CASE LVIII.—*Acute peritonitis, with irritation of the gastro-intestinal mucous membrane.*—Arembroust, aged twenty-four years, red hair, ruddy complexion, white skin, muscles flabby and small, very irritable, arrived 16th Messidor, an. XIII. at the hospital of Woerden in Holland, from that of Utrecht, with symptoms of acute peritonitis. He told me that six weeks previously he had been attacked with intermittent fever of which he had been cured at Utrecht; that during his convalescence he had been affected with pains in the abdomen with fever, subsequent to a hearty meal, which had compelled him to enter the hospital of Utrecht, from whence he came to Woerden. He was then at the eighth day from the commencement of the pain.

His face was wrinkled, florid, expressive of pain, and always covered with sweat; abdomen slightly meteorized, its whole surface very sensible to the slightest pressure, skin burning, pulse frequent, hard, and very active. The violence of the pain, which was unremittent, was so great that the patient dared not to move his body in the slightest degree; he had a disposition to vomit irritating substances, and a slight degree of diarrhœa.—I ordered a solution of gum arabic, aromatized and acidulated, and an emollient enema. During the first two days there was rather an increase than a diminution of the symptoms. Finally, I withheld the use of enemata, and restricted myself to the use of acidulated solution of gum arabic, to oxycrate, or to barley water with oxymel, according to the taste of the patient, and to join to these internal means emollient fomentations to the abdomen, and lotions over the whole body with tepid water and vinegar. The relief was so prompt that I could not but attribute it to these topicals. In twenty-four hours the febrile action was reduced to an excitement of the pulse, which produced heat only in the evening.

The 21st Messidor, Arembroust's appetite began to return. His complexion became clear. The hardness of the pulse was less in the evening. I allowed him soup and panada; and the white decoction aromatized, for the bowels were yet too loose.

The 23d, the fever had entirely ceased. Pressure was not painful, except at the epigastrium, and when strongly made. A little wine and more food allowed.

The 30th, completely cured. He left the hospital in better health than he had enjoyed for a long time previously.

Observations.—The predisposition which I have announced, we now see was the intermittent fever, which appears to have weakened the abdomen: an excess of food, which distended the peritoneum, sufficed to develope in it a point of irritation. This point has been kept up by an inappropriate treatment, by exercise, his removal, &c. until the period of the patient's arrival at Woerden, and is calmed, thus to speak, by the sole abstraction of the stimulants which had fomented it.

In the other well-marked cases of peritonitis which I have had occasion to treat, I have always joined to the means just indicated, bleeding and leeches; but the debility of Arembroust, who was scarcely convalescent from an intermittent fever, and the flabbiness of his flesh deterred me, and very fortunately I had no occasion to repent of it.

To this case of acute, I will add one of chronic peritonitis, in which, if a cure is not evident, perhaps the possibility of sometimes effecting it may be perceived, provided the patient will strictly conform to the prescriptions. But this confident obedience is extremely rare in soldiers, especially in the wards of hospitals.

CASE LIX.—*Chronic peritonitis, following continued fever.*—Mannessere, twenty-four years of age, light complexion, florid, fleshy, fat, and well-developed, entered the hospital of Udine, the 5th August, 1806, the fourth day of an attack of violent fever, the exciting cause of which he was ignorant of.

During the first days, I recognised the symptoms of an angiotenic fever, with a sore spot in the left side of the chest, with cough and dyspœna.* This disease was at first treated by a

* We see that this was a case of gastro-enteritis, with slight pleurisy.

bleeding, demulcents, and emollient topicals. The pain left the chest, and appeared to fix itself in the abdomen, especially in the region of the spleen. There was general sensibility of the abdomen to the touch, and constipation.*—Emollient fomentations, leeches, continuation of the antiphlogistic treatment. The 20th of August, nineteenth day of the disease, apyrexia, scarcely any pain. Appearance of convalescence.

From the 20th to the 29th, the twenty-eighth day from the attack, Mannessere evinced great appetite, but as I perceived that the pulse was always rather too frequent, and that pressure on the left hypochondrium continued slightly painful, I was constrained to restrict him to soup, gruel, and rice. I observed with pleasure that the pain gradually became more obscure; but finally overcome by his solicitations, I increased his food to half a ration, and allowed him a little meat.

The 29th, he had an evident febrile action, with tumefaction and exaltation of sensibility over the whole abdomen. Return to former treatment, and as little relief resulted from it; a blister was applied over the false ribs on the left side, which was kept open. After three days, the patient was restored to the condition in which he was in before the exasperation. Farinaceous diet, demulcent and slightly diaphoretic drinks. Similar potions.

The sensibility gradually diminished; but the swelling and renitence continued. The 7th of September, there was still a febrile action, produced by too much food; but the sensibility of the irritated point was not increased in the same proportion. I again resorted to a severe diet; but my patient appeared little convinced of the necessity of conforming to it. He so strongly desired more solid food, that I do not doubt his having sometimes procured it; from time to time I observed febrile action, which always ceased, as soon as I restricted him to soup and gruel, because frightened by the result, he did not commit two imprudences in succession.

Finally, he became insensibly less irritable; he recovered his strength and flesh, and bore solid food. He believed his health reëstablished; the frequency of the pulse, the renitence of his hypochondrium, the round tumour which could be felt there, made me think differently. However, I permitted him to walk a short

* Peritonitis replaced the pleurisy.

distance to try his strength. He returned with a fever, which continued until the next day. Mannessere having rested some days on a mild diet, continued to recover his strength and *embon-point*, and better and better to bear solid food, although the renitence and obscure pain continued. After having remained seven to eight days more at the hospital, he left it the 28th of September, the fifty-sixth day after the commencement of the inflammatory fever.

Observations.—In this case, we may observe, the successive reëstablishment of the strength; although the patient has a point of irritation which perhaps must one day cause his destruction. So long as this point is preserved in an obscure degree of sensibility, convalescence continues to advance; as soon as it becomes sufficiently acute to accelerate the nervous and vascular actions, recovery is suspended, or retrogrades. Have we not seen this in the convalescence from all points of irritation? And does not this general fact point out to us the course we have to pursue?

Since sensibility may diminish in the place where it exists in excess, whilst the general strength is reëstablished, provided the materials of nutrition do not exceed a certain limit, it is necessary to endeavour to ascertain this limit, in order never to exceed it. Experience will soon teach it to the physician and patient, who will act in concert for the destruction of the disease. If there be any means of preventing a fatal disorganization of the tissues in which permanent irritations are seated, it is doubtless this active watching which teaches us to maintain the forces in the same degree, and to augment them, if needful, without exalting the sensibility, and too actively agitating the apparatus which presides over the circulation and distribution of the fluids.

The chief object of our art, then, is here, as in the most acute diseases, to give to nature time to act; but it is necessary to be firm in the principles, and constant in the execution of the plan adopted. The physician will be so, if he is convinced that every chronic phlegmasia has a tendency to cease so long as the part is not disorganized, and that most frequently, the part is disorganized only because this irritation is too frequently encouraged; for all the organic actions when they exceed their habitual rhythm have a determinate duration.

SUMMARY OF THE HISTORY OF PHLEGMASIÆ OF THE PERITONEUM.

1st. *Causes.*

All external violence which compresses the abdomen, causes the serous surfaces to forcibly rub one against another, and accumulates the blood in the viscera covered by the peritoneum; all movements which produce the same effects, all those which suddenly displace the viscera, raise up the peritoneum and stretch the tissue which unites it to the subjacent parts, may produce peritonitis, and a determination to the post-peritoneal tissue. These causes act more certainly in proportion as the individual is more subject to concentrations and evacuations, is more feeble and irritable, and as the general plethora, and especially of the abdominal capillaries, is greater at the moment when they are in action.

2d. *Development.*

When the cause is very active, and the predisposition considerable, the disease comes on violently, and announces itself by the pain and fever which commonly accompany constipation, vomiting, and sometimes tumefaction of the abdomen; 2d, in a second grade fever is wanting, there is only pain, constipation, sometimes vomiting, and finally sympathetic derangements of the nervous system, as delirium, convulsions, and coma; 3d, in a third, there is but pain with constipation, but without vomiting or sympathetic nervous derangements. As the disease is then of some duration, tumefaction and fluctuation are present; 4th, in a fourth, the disease is presumable only from tumefaction and renitence of the abdomen, and ascites.

3d. *Progress and termination.*

1st. When the symptoms are violent, and the disease well treated, it may terminate in the course of from seven to thirty days by cure or death.* The cure is announced by the simulta-

* It may be removed by art in a few hours; it has then no absolutely necessary duration or course.

neous diminution of local and sympathetic symptoms ; death, by the augmentation of all the derangements of the economy, afterwards by the diminution of the pain and the cessation of reaction, coinciding with the nervous disorders, and with most of the symptoms of typhus.

2d. The more obscure the symptoms are, the longer the disease may continue, arising in part from its being misunderstood, and consequently not properly treated. These circumstances give rise to chronic peritonitis, ordinarily a fatal disease: this peritonitis often assumes the characters of the acute some time before death. The stronger the patient is the more closely does it then imitate this latter. When it remains chronic, death may be retarded several years.

4th. *Organic Alterations.*

They reduce themselves, 1st, to a development of the peritoneum and of its subjacent tissue, with sanguineous or lymphatic injection, and the production of certain heterogeneous compounds which act like foreign bodies to the tissue in which they are contained; 2d, to an exudation of fluids, of which some become organized, and serve as a means of adhesion, the others are decomposed and act as foreign bodies to the membrane that contains them; 3d, to different irregular productions of infrequent occurrence.

5th. *Plan of Cure.*

This consists, 1st, in the use of means which weaken arterial action when it is exalted, and lessen pain: these means are bleeding, emollients, refrigerants and absolute rest; 2d, in the use of medicines which cause a predominance of organic actions in the healthy tissues and apparatuses. These remedies are external applications which mildly stimulate the skin, those which phlogose it, those which divide it, which implicate the subcutaneous tissue, and which establish suppuration there, sudorifics, diuretics, and laxatives. All these should be employed cautiously, in proportion to the pain, the fever, and the power of the stomach, from the most acute to the most chronic stage; 3d, in a regimen and exercises which are incapable of contravening the calming and regulating effect of the other means of which the treatment is composed.

6th. *Complications.*

If the peritonitis is complicated with irritations of the head, the chest, and with that of the mucous membrane of the intestines, these diseases are marked by their proper symptoms, and the treatment should undergo little modification. Of all the continued fevers, those only attended with prostration and nervous stupor, require that the patient should be more stimulated than is required for peritonitis alone.*

* I have corrected this error in the preceding notes.

CONCLUSION.

THE facts which I have related, the disquisitions I have joined to them, and the comparisons which have resulted, have demonstrated, at least in respect to the organs whose inflammations we have studied, the justness of the propositions which I have advanced in my prolegomena. It has been seen, that if a person affected with a phlegmasia of the chest or of the digestive passages, is not carried off during the acute stage by the rapid destruction of the organ, or by pain, he should fear when the irritation continues, the slow disorganization of the tissue in which it is seated; and that from the moment in which this disorganization is consummated, all hope of cure is lost. It has been equally proved that the irritations which commence in an insensible manner and persist in an obscure degree have always the same termination, *disorganization*.

All the facts have concurred to demonstrate that this *disorganization* consists in the development of the lymphatic capillaries, their engorgement, and the extravasation of gelatinous, albuminous, oleaginous and fibrinous fluids.*

We have remarked that these fluids, in part withdrawn from the influence of the particular chemical power, obeyed peculiar laws, and formed in the midst of the living tissues, different inorganic aggregates,† more or less dissimilar from the physiological condition of our fluids, rarely capable of reëssuming their first condition and of reëntering into the circulatory mass, more or less suited to hasten the decomposition of our organs, in a word, almost always sufficing to prevent a radical cure.

* It is necessary to add to this some aberrations of the nutrition of the inflamed organs, which permanently change them from the normal condition; whence the production of more or less extraordinary tissues, as scirrhus, melanoses, medullary sarcoma, &c. which have been taken for the cause, but which are only the effect of the disease, that is of a more or less inflammatory irritation.

† See the preceding note.

We have been conducted to this very simple conclusion, that the art of curing chronic inflammations consists in knowing how to prevent, or at least to arrest them before the period of *disorganization*.

But the observations which have established this truth have at the same time taught us that the external signs which should put the physician on his guard against the effects of partial irritations, are so obscure, that the true character of the disease is most frequently misunderstood. It is then necessary to redouble attention in order to refer each symptom to its correspondent organic alteration.*

This study has convinced us that fever and pain, which are our principal guides in internal diseases, are subject to an infinity of variations, always subordinate to the actual condition of the body and to the manner in which it is influenced by external agents. To this we have been compelled to come, in order to fix the frequently too fugitive grades of hectic fever—to discuss the sympathies—the associations of action—and to refer all the morbid phenomena—all the disorders which they produce, and all the influences of exterior bodies, to the modification of a *single* and *fundamental* property in pathology, as it is in physiology—*sensibility*.†

Many facts already in my possession, but which are not arranged, offer a prospect of the possibility of at least reuniting the other phlegmasiæ to this grand and too long neglected principle. I shall not delay connecting them together, so soon as I shall have collected from clinical experience a sufficient number to derive from them, results advantageous to science, and when I shall have an opportunity of resuming the work which I at present conclude. Military practice offers precious advantages for extensive observation; but to derive benefit from what has been seen, it is necessary to compare it with what has been observed by others, to investigate the records

* The French physicians who have cultivated pathological anatomy have endeavoured to do this, but it is not always possible to accomplish it: most frequently we must content ourselves with establishing the seat and the degree of irritation, in order to apply to it the proper remedies. The precise mode of the disorganization rarely furnishes particular indications.

† Still better, contractility, the exaltation of which constitutes super-irritation, or more simply, morbid irritation.

of the art, to trace its progress, and to cast a glance over the sciences most closely connected with it. This is always impossible in the midst of camps, in isolated villages and small towns, where circumstances often render it necessary to establish hospitals.

Still further difficulties embarrass the military physician, who wishes to publish an extensive work. The cares, the details, the delays, which the editing and typographical execution involve, demand physical and moral tranquillity. I could collect cases, and daily make observations upon the objects which most forcibly strike me, but I should never have been able to arrange the facts, and investigate them with advantage, so as to form a regular body of doctrine, and worthy of being offered to the public, if his excellency the minister of war,* had not kindly extended the period which he allowed me to remain in Paris, for the reëstablishment of my health.

It is entirely owing to the lively interest which he always exhibits for every thing that tends to the improvement of the medical department of the army, that I have been enabled to complete this work, which was commenced solely for the purpose of fixing in my mind some fugitive recollections, and to occupy leisure which I could not employ in the contemplation of the great masters of our art. May it prove sufficiently useful, if not to fulfil the philanthropic views of his excellency, at least to prove that I have done my best to render myself worthy of the honourable duty which he has confided to me, and of the favour he has granted.

* Count Dejean.

INDEX.

(The Roman figures denote the volume, and the Arabic, the page.)

A.

- Abscess* in general, I. 35.
Acetate of lead in pulmonary phthisis, I. 444.
Adhesions in pleurisy, I. 169, 219;—mode of treating them by regimen, I. 238;—in peritonitis, II. 361.
Adhesive power of the fluids and solids, destroyed by minerals, I. 434.
Air, I. 201;—its effects on the pleura after the operation of empyema, I. 230;—its influence in the production of accidental phthises, I. 300;—its influence in the same diseases, when charged with foreign bodies, I. 301.
Air, warm, a cause of gastritis and enteritis, II. 128, 138.
Air charged with putrid miasms, II. 139.
Air, moist and cold, a cause of enteritis, II. 142.
Aliments, see food.
Alterations, organic, in pleurisy, I. 218;—in phthisis, I. 381;—in phlogoses of the mucous membranes of the air passages, I. 376; II. 167;—in peritonitis, II. 361.
Aneurism and varices of the pectoral organs, I. 111;—of the heart, with remittent, quotidian, and tertian fever, I. 116;—of the heart, with chronic pleurisy, I. 158, 197;—of the heart with intermittent fever and gastritis, II. 100.
Antiphlogistic means, first series of, I. 389;—second series of, I. 399;—third series of, I. 403;—their application in different species of phthisis, I. 417.
Antiscorbutics, I. 422.
Antispasmodics, their use in phlogosis of the lungs, I. 410;—in that of the colon, II. 257;—in that of the peritoneum, II. 376.
Apoplexy, with gastritis, II. 40.
Applicata, their influence on the lungs, I. 303.
Arachnoiditis, with continued fever and

- catarrh, I. 92;—chronic, with mania, I. 486;—with gastritis, II. 40.
Ascites, simple primitive, can it produce peritonitis? II. 328.
Astringents, are they proper in diarrhoeas, following fever? II. 91;—in chronic enteritis in general, II. 25.
Atmosphere, warm and electric state of, a cause of gastritis, II. 128;—cause of enteritis, II. 138.
Atrophy of the lungs in pleurisy, see all the cases of pleurisy and I. 220.

B.

- Bark*, its bad effects in gastritis, II. 224;—in intermittent fevers, II. 93;—when the inflammatory diathesis co-exists with intermittent fever, II. 115;—in certain fevers of an ataxis character, II. 223.
Baths of warm water in pulmonary phlogosis, I. 401.
Baths, dry in catarrh, I. 135;—in phthisis, I. 435.
Bitters, vegetable, their effect in phthisis, I. 422.
Bladder, its phlogosis complicated with phthisis, I. 264;—*Catarrh* of, II. 291.
Bleeding, means of determining its utility in phlegmasia of the chest, see *Antiphlogistics*, first series.
Blisters, see *Vesicatories*.
Brain, often affected in pulmonary phthisis, I. 267;—its chronic inflammation gives rise to all the disorders found in the bodies of, I. 476;—its phlegmasia has been long imperfectly known, I. 473;—the treatment of inflammation of, I. 489;—its inflammation primary or secondary, I. 474;—it may be sympathetically affected by irritation of the gastro-intestinal mucous membrane;—I. 475;—this last may become inflammation, *ibid*;—effects of inflammation of, *ibid*.

C.

Cancer of the breast, I. 55.

Carnification of the lungs in general, I. 35;—the causes which render it common in armies, I. 80.

Catalepsy, I. 496.

Catarrh, pulmonary, in general, I. 55;—its difference from peripneumony, I. 70;—its seat and mechanism compared with those of peripneumony, I. 70;—violent case of become chronic, I. 74;—case of chronic, changed into chronic peripneumony, I. 77;—case of chronic, with scirrhus of the bronchial glands, I. 78.

Catarrhs, pulmonary, in general, reason of their frequency and danger in military service, I. 80.

Catarrh, chronic pulmonary, terminating in adynamic fever, cases of, I. 83, 84, 86, 89;—case of, following adynamic fever, I. 89;—case of, following continued fever, I. 91.

Catarrh, case of, with chronic arachnoiditis and peritonitis following continued fever, I. 92;—case of chronic terminated by acute dysentery, I. 96.

Catarrh, pulmonary, with intermittent fever, in general, I. 97;—case of chronic supervening on intermittent fever, I. 104.

Catarrh, pulmonary, its general history, I. 122;—chronic, progress and termination, I. 126;—its treatment, I. 127;—cases of simple chronic cured, I. 137, 141;—case of chronic, reaching the œdematous stage and cured, I. 138.

Catarrh, chronic tubercular, in general, I. 265;—case of, I. 269;—cases of complicated with diarrhœa, I. 265, 268, 272.

Catarrhs followed by phthisis, axioms in relation to, I. 275.

Catarrh, scorbutic, I. 118.

Catarrh, consumptive, I. 149;—cases of hectic fever resulting from, I. 149, 150.

Cataplasms, useful in pulmonary catarrh, I. 135;—useful in pleurisy, I. 226;—their use in pulmonary phlogosis in general, I. 400.

Causes of catarrh and peripneumony, I. 122;—of pleurisy, I. 205;—of lymphatic inflammations of the lungs, I. 361;—of marasmus in general, II. 82;—of phlogosis of the mucous membrane of the digestive organs,

II. 128;—of enteritis, II. 138;—of peritonitis, II. 349.

Cauteries, see *Exutories*.

Cephalitis, chronic, case of, with hemiplegia, apoplexy and purulent collection, I. 478.

Chancrous ulceration in general, I. 51.

Chill, febrile, its influence on the lungs, I. 123;—its influence on the parenchyma of the abdomen, II. 320.

Circulation, in hæmorrhages and phlogosis compared, I. 210.

Circumfusa, their influence in phthisis, I. 300.

Clothing, its influence on the production of phthisis, I. 303;—considered as preservative against phthisis, I. 427.

Cold, its influence on catarrhs, I. 80;—its effects upon the lungs, I. 123;—moist, a cause of dysentery, II. 142;—useful as a topical application in gastritis, and certain febrile diseases, II. 183.

Colic, nephritic, II. 288;—it is the cause and not the effect of calculi, *ibid*;—the disorganization of the kidneys owing to its improper treatment, *ibid*;—its proper treatment, I. 289;—examples of caused by calculi, and cured by an antiphlogistic regimen, II. 290.

Comparison of hæmorrhages with inflammations, I. 210;—of gastritis with enteritis in relation to the resistance of the tissues to disorganization, II. 226;—of gastric derangement with phlogosis, II. 233;—of weakness of the stomach with phlogosis of this viscus, *ibid*.

Complications of catarrh in general, I. 127;—of pleurisy, I. 217, 244;—of phlogosis of the mucous membranes with intermittent fevers, II. 92;—of these phlogoses with worms, II. 269;—of the phlogosis of the mucous membranes in general, II. 276.

Collection of the product of inflammation, I. 35;—its difference and its effects upon the tissue in which it occurs, I. 36.

Collections, purulent critical, cause of phthisis, I. 315;—in phthisical persons, I. 446.

Concentration, see *Congestion*.

Concretions, osseous, in the pleural cavity, I. 292.

Congestion, internal, from the effect of febrile chill, its effects upon the

- lungs, I. 100;—its effects on the gastric viscera, II. 97.
- Congestion, cerebral*, occurring during delivery, case of, I. 490;—with cephalalgia and gastro-enteritis, without paralysis, case of, I. 491;—simple, without paralysis, I. 492;—with incomplete hemiplegia, I. 494.
- Congestions, lymphatic*, of the lungs, means of dissipating, I. 428.
- Congestion of the mesentery*, is it produced by cinchona? II. 336;—is it the cause of lientery? II. 339.
- Constipation* in peritonitis, its mechanism, II. 303.
- Constriction of the stomach*, habitual in gastritis, II. 26.
- Contagion of dysentery*, II. 140.
- Contusion*, a cause of pleurisy, I. 206;—a cause of peritonitis, II. 350.
- Corpuscles* dissolved in the air, see *Air*, and *Circumfusa*.
- Corrosive sublimate*, will it produce pulmonary phthisis? I. 304.
- Cough*, its treatment, I. 439;—gastric, II. 17;—gastric, its characters, II. 29.
- Cups*, their application in pleurisy, I. 228.

D.

- Debility*, simple, how distinguished from that arising from phlogosis, I. 120.
- Degeneration*, lardaceous, I. 44.
- Deglutition*, difficult or impossible in gastritis, II. 26.
- Delitescence*, theory of, I. 34.
- Depots* in phthisical persons, I. 446;—critical, cause of phthisis, I. 315.
- Disorganization* does not readily take place in the mucous membranes, II. 168.
- Development* of catarrh and pneumonia, I. 122;—of pleurisy, I. 208;—of phthisis in general, I. 367;—of phlegmasia of the mucous membranes of the digestive organs, II. 145;—of peritonitis, II. 354;—extraordinary of the subjacent peritoneal tissue, with lardaceous degeneration and ulceration, II. 363;—with pulmonary tubercles, and without ulceration, II. 370.
- Diarrhœa*, bilious, II. 86;—excessive, with catarrh, I. 272;—colliquative of consumptive patients, I. 342;—the treatment of this last, I. 445;—dry, II. 78;—chronic apyrexia with dropsy, II. 79;—apyrexia, with ma-

asmus, II. 84;—not inflammatory, its distinguishing characters, II. 85;—case of chronic following ataxic fever, II. 88, 90;—do. following continued fever, II. 89;—do. following intermittent fever, II. 122, 125;—secondary chronic, its history, II. 155;—primary chronic, its history, II. 157;—chronic, its treatment, II. 251;—case of secondary chronic following ataxic fever, II. 263;—do. following chronic catarrh, II. 265;—is more or less curable in certain circumstances, II. 262.

Diathesis, inflammatory, II. 109.

Diet, severe, useful in pulmonary phlogosis, I. 413.

Diseases considered as a cause of phthisis, I. 315.

Dissolution of the humours, caused by mineral substances, I. 434.

Diuretics, their use in pulmonary phlogosis, I. 412;—their use in phlogosis of the colon, II. 262.

Dropsy, chronic diseases in which it rather than marasmus occurs, II. 82.

Dyspnœa, its treatment, I. 439.

Dysentery, with catarrh, I. 96;—chronic, rendered febrile with pneumonia, II. 64;—chronic supervening on acute, II. 68;—chronic, with tubercular catarrh, II. 71;—with quotidian fever, II. 123;—causes of, II. 138;—is it contagious? II. 140;—its description, II. 153;—acute, II. 154;—II. 155.

E.

Education augments the sensibility of the viscera, II. 42.

Effusion, sanguineous in the chest with pleurisy, I. 166;—in general, as a sign of chronic pleurisy, I. 214;—as an organic disorder in pleurisy, I. 219, 224;—into the ventricles of the brain with catarrhal phthisis, I. 267;—into one ventricle, manifested its effects on the opposite side, II. 55;—sanguineous in the abdomen, II. 304;—may be reabsorbed in peritonitis, II. 333;—in the abdomen may it become a cause of peritonitis? II. 351, 352.

Electricity tends to produce phlogosis, II. 128.

Embarrassment, gastric, compared with irritations tending to phlogosis, II. 231.

Emetics in gastritis, with intermittent fever, II. 97;—in gastritis, II. 97;—

in enteritis, II. 255;—can they produce peritonitis? II. 332;—their employment in peritonitis, II. 379.

Empyema, operation for, is it advantageous in chronic pleurisy, I. 229.

Encephalic inflammations, I. 473.

Encephalon, see *Brain*.

Engorgement, see *Congestion*.

Enteritis, simple primitive, II. 49;—causes of, II. 138;—its description, II. 153;—treatment of, II. 244.

Epiphenomena of phthisis, I. 340, 378.

Eruptions, different in phthisical persons, their treatment, I. 446.

Etiology of catarrh and pneumonia, I. 122;—of pleurisy, I. 205;—of phthisis, I. 361;—of phlogosis of the mucous membrane of the digestive passages, II. 128;—of peritonitis, II. 349.

Exanthemata, causes of phthisis, I. 318.

Excreta and Retenta, how they produce phthisis, I. 311.

Excretions, fetid, in phthisis, I. 444;—in enteritis, II. 63;—effect on the rapidity of the circulation, *ibid*;—peritonitis, II. 360.

Expectoration, as a sign of suppuration in phthisis, I. 356;—means of treating the vitiations of, I. 444.

Expectorations puriform, imitate phthisis, their differences and treatment, I. 454.

Exutories in chronic catarrh, I. 135;—in pleurisy, I. 228;—in pulmonary phlogosis in general, I. 406;—in dry tubercular phthisis, I. 435;—in acute peritonitis, II. 378;—in chronic peritonitis, II. 384.

F.

Factor of the Excretions, see *Excretions*.

Fever, hectic, arises from pain or resorption, I. 60;—its symptoms are easily confounded with those of phthisis, I. 148;—from absorption, I. 149;—from resorption in a chronic pleurisy, I. 290;—of phthisis, its effects and treatment, I. 447.

Fever, adynamic, complicated with catarrh, I. 83, 84, 86, 89;—with pleurisy and phthisis, I. 280;—in general may be confounded with gastritis, II. 199.

Fever, continued, with chronic catarrh, I. 91;—without particular symptoms, II. 52.

Fever, intermittent, in general, as cause

of phthisis, I. 317;—with catarrh, I. 104;—quotidian, with general dropsy from exhaustion, I. 118;—with pleurisy, I. 172;—complicated with phlogosis of the mucous membrane of the abdomen, II. 92;—do the last always require bark for their cure? *ibid*;—how they produce death, II. 103;—quotidian with gastro-intestinal phlogosis, and aneurism of the heart, II. 100;—tertian, with chronic gastritis, II. 103;—changed into continued, with phlogosis of the chest and abdomen, II. 106;—with phlogosis of the viscera of the thorax and abdomen, II. 114;—followed by an inflammatory diathesis, terminated by disorganization of the abdominal viscera, II. 117;—quotidian, with dysentery, II. 123.

Fever, remittent, I. 116.

Fever, yellow, rarely accompanied with hepatitis, II. 278.

Food, exciting, cause of phthisis, I. 305;—cause of gastritis, II. 136;—cause of dysentery, II. 138.

Fomentations, emollient, their utility in pulmonary phlogosis, I. 400.

Fright, cause of catarrh, I. 123.

Frequence of pulse, without local affection, II. 52.

Frictions, their use in pulmonary phlogosis, I. 407;—their use in peritonitis, II. 376.

Fumigations, their use in phthisis, I. 444.

Furuncle, and collections in phthisical patients, I. 290.

G.

Gangrene from excess of inflammation, I. 34;—from slight inflammation, *ibid*;—of the pleura, I. 196;—produced by repeated rebefacients, I. 234.

Gastritis, acute, simulating catarrh and ataxic fever, II. 17;—acute, with rheumatism, simulating inflammatory catarrh, II. 23, 27;—acute, simulating ataxic intermittent, II. 31;—acute, summary of its characters, II. 33;—acute, without fever, II. 34;—acute, with biliary cystitis, II. 36;—acute, with arachnoiditis and apoplexy, II. 40;—chronic, with diarrhœa, II. 44, 46;—complicated, with intermittent fevers, in general, II. 92;—acute, with intermittent fever and aneurism of the heart, II. 100;—chronic, with

tertian intermittent, II. 103;—in general, its etiology, II. 128;—its causes, *ibid*;—general description of, II. 146;—its mechanism, II. 159;—organic alterations, II. 167;—its treatment, II. 178, 184;—acute, simulating continued ataxic fever, II. 186;—acute, tending to become chronic, II. 191;—acute, simulating adynamic ataxic fever, II. 197;—how to be distinguished from adynamic fevers, II. 199;—acute, preceded by a long irritation of the stomach, II. 200;—simple chronic, II. 205, 221, 225;—with dysentery, II. 228;—may be produced by excessive use of warm drinks, II. 230.

Gastritis, chronic latent, II. 231.

Gastro-enteritis, always occasions irritation of the liver, II. 278; always produced by encephalitis, *ibid*.

Gas, its employment in phthisis, I. 444.

Gesta et percepta, causes of phthisis, I. 313.

Glands, lymphatic, their acute inflammation, I. 40;—their chronic inflammation, I. 42.

H.

Heat, its effects on the human body, II. 129.

Heat, atmospheric, cause of gastritis, II. 129;—cause of enteritis, II. 138;—cause of hepatitis and splenitis, II. 281.

Hectic fever, see *Fever*.

Hæmatemesis followed by chronic gastric irritation, II. 207.

Hæmoptysis followed by dry tubercular phthisis, I. 347;—in general, its treatment, I. 408.

Hæmorrhages, how they produce phthisis, I. 311, 317;—often coincide with inflammations, II. 62;—in general, their theory, II. 210;—of mucous membranes, *ibid*;—of the peritoneum, its mechanism and relation to peritonitis, II. 351.

Hepatization of the lungs, I. 35;—causes which favour its occurrence, see *Induration*.

Hepatitis, II. 277;—caused by atmospheric heat, II. 282;—ordinarily secondary to gastro-enteritis, II. 279.

History, general, of catarrh and pneumonia, I. 122;—of pleurisy, I. 205;—of lymphatic inflammation of the lungs, I. 361;—of phlogosis of the mucous membranes of the digestive

organs, II. 128;—of peritonitis, II. 349.

Hospitals, their evacuation, evils resulting from, I. 81.

Humidity of the air, see *Air*.

Hypochondriasis cause of phthisis, I. 319.

Hypochondria, see *Obstructions*.

I.

Induration, red or sanguineous, in general, I. 35;—of the lungs, causes which render it frequent, I. 124.

Inflammation in general, its frequency, I. 31;—modification according to tissue, &c. I. 33;—its influence upon the functions in general, I. 56;—influence of phlegmonous, and its consequences, *ibid*;—of that of the muscular, tendinous, ligamentous, and osseous tissues, I. 61;—of that of the membranous tissues, I. 62;—of that of the lymphatic fasciculi and all white tumefactions, I. 63;—sometimes yield to revulsives, I. 151.

Inflammation, acute, considered in the parenchyma and cellular tissues, *ibid*;—in the capillaries of the secretory glandular tissues, I. 37;—in the muscular, tendinous, ligamentous, cartilaginous, and osseous tissues, I. 38;—in the membranous tissues, I. 39;—in the lymphatic glands, I. 40;—passing into the chronic in the different tissues, *ibid*.

Inflammation, chronic, in the proper capillaries of the lymphatic glands, I. 42;—in those of the cellular tissue, I. 44;—in those of the membranes, I. 45;—of the principal viscera, following intermittent fever, I. 107.

Inflammation of the liver, see *Hepatitis*.

Inflammation, pulmonary, in general, I. 68;—sanguineous, I. 69;—lymphatic, I. 361;—their general history, I. 361;—their treatment, I. 386;—divided into four degrees, as regards their treatment, I. 387.

Inflammation of the stomach, see *Gastritis*.

Inflammation of the intestines, see *Enteritis*.

Inflammation of the abdominal viscera, in general, II. 10;—of the mucous membrane of the digestive passages, II. 12;—summary of those met with at Friouli, I. 15;—chronic of the mucous membrane of the intestines, extending to the stomach, II. 49;—

ditto with cerebral irritation, II. 51;
—acute of the mucous membrane
of the colon become chronic, II. 56;
—chronic of the same membrane
with epistaxis and pulmonary phlo-
gosis, II. 58;—compared, with hæ-
morrhages, II. 210.

Inflammatory of the peritonum, see
Peritonitis.

Inflammatory diathesis, II. 109.

Ingesta which dispose to gastric phlo-
goses, II. 135.

Irregularities, see *Complications*.

Irritation, does not change its charac-
ter on being prolonged, I. 147.

Irritations, mechanical and chemical,
acting upon the lungs, I. 122;—chro-
nic of the stomach more or less ap-
proximate to gastritis, II. 237.

Issues, see *Exutories*.

K.

Kermes, its use in suppurative phthisis,
I. 441.

L.

Lardaceous degeneration, I. 44;—of the
membranes, I. 45;—ulceration of, I.
54;—of the post-peritoneal tissue
with ulceration, II. 363;—ditto, with-
out ulceration, II. 370;—its me-
chanism, II. 366.

Liver, its inflammation, II. 277;—its
suppurations, *ibid*;—found healthy,
though the patient suffered pain in
the hepatic region, II. 285;—small
abscess in the substance of, II. 285.

M.

Marasmus, what constitutes it, I. 438;
—its most common causes, II. 82.

Mechanism of pectoral phlogoses, I.
124;—of constitutional phthisis, I.
366;—of gastric phlogoses, II. 159;
—of peritonitis, II. 351.

Medicaments which produce gastritis,
II. 137.

Melancholy, considered as a cause of
phthisis, I. 319.

Mercury, its use in phthisis, I. 430.

Milk, its utility in phthisis, I. 416;—
in dry apyrexia phthisis, I. 436

Minerals, their effects upon our fluids,
I. 434.

Moisture of the air, see *Air*.

N.

Narcotics, their use in phthisis, I. 432.

Neuroses considered as a cause of
phthisis, I. 319.

O.

Obstructions resulting from a stimulat-
ing treatment employed for the cure
of phlegmasia of the mucous mem-
branes, I. 151;—are not the sole
result of intermittent fevers, I. 118.

P.

Pain, is a cause of inflammation, or
means by which it influences the
functions, I. 56;—of acute pleurisy,
I. 153;—of chronic pleurisy, I. 174;
—of equivocal chronic pleurisy, I.
213;—of phthisis, and its proper
treatment, I. 439;—of the limbs in
phthisis, I. 447;—of gastric phlo-
goses, often the cause of death, II.
67;—obtuse, or uneasiness, common
to melancholic patients, II. 85;—
local, with intermittent fever, not
always ataxic symptoms, II. 149;—
its influence in hæmorrhages, II. 211;
—its influence on the symptoms of
peritonitis, II. 346.

Pain in the side in pleurisy, I. 154;—in
chronic pleurisy, I. 174;—irregular,
I. 211.

Percussion of the chest in chronic pleu-
risy, I. 214.

Perforation of the pulmonary paren-
chyma, I. 191, 195, 197, 221;—of the
intestines, II. 348.

Pericarditis complicating pleurisy, I.
208;—with tubercular diathesis, I.
283.

Periodicity, febrile, does it always re-
quire bark, II. 93.

Peripneumonia in general, I. 70;—
chronic tubercular, I. 254, 256, 257,
259, 262;—often complicated with
gastritis, II. 102.

Peritonitis in general, II. 293;—its va-
rious forms, II. 294;—acute, resem-
bling ataxic fever, case of, II. 297;—
acute, simulating nervous colic, case
of, II. 301;—acute hæmorrhagic, II.
305;—acute, following pleurisy, II.
310;—chronic, become acute, II.
313;—chronic, followed by pleurisy,
II. 317;—chronic, following inter-
mittent fever, becoming acute at its
close, II. 319;—chronic, with phlo-
gosis of the mucous membrane of
the digestive canal, II. 322, 324;—
chronic, with dropsy, II. 328;—chro-
nic apyrexia, following an emetic,
II. 330;—chronic, with tumefaction
of the mesenteric glands, following
intermittent fever, 333, 337;—chro-
nic, from a fall, II. 339;—with pleu-

- risys and carditis, II. 344;—chronic, with perforation of the intestines, II. 347;—its general history, II. 349;—its treatment, II. 373;—acute, with gastro-intestinal irritation, II. 385;—chronic, following continued fever, II. 386.
- Perspiration, suppressed, cause of phthisis*, I. 311.
- Phlegmasiæ in general, causes of phthisis*, I. 317.
- Phlegmon in general*, I. 33;—its influence over the functions, I. 56;—long considered as the prototype of inflammation, I. 473.
- Phlogosis, chronic, of the chest, cured by regimen*, I. 451;—resembling suppurating phthisis, I. 452;—assuming the appearance of incipient phthisis, I. 456;—resembling tubercular phthisis, II. 461, 465.
- Phlogosis, chronic of the mucous membrane of the colon, with slight catarrh*, II. 76;—producing worms, II. 78.
- Phlogosis of the mucous membrane of the digestive passages in general*, II. 128.
- Phthisis, pulmonary, in general*, I. 247;—why frequent in military life, I. 251;—diseases which act as causes of, I. 315;—peripneumonic, I. 254;—comparison of fever case of peripneumonic, I. 254;—ulcerated tubercular, I. 262;—acute, I. 260;—*tubercular in general*, dependent on chronic pleurisy, I. 277;—with suppurated tubercles, following chronic pleurisy, *ibid*;—with ulceration of the parenchyma, produced by chronic pleurisy following an adynamic fever, I. 280;—with general tubercular diathesis, following chronic pleurisy, and pericarditis, I. 283;—with suppuration of the parenchyma, ulceration of larynx and diarrhœa, occasioned by chronic pleurisy, I. 286;—very rapidly developed after pleurisy, I. 290;—*dry tubercular*, caused by pleurisy, I. 294;—with tubercular peritonitis, I. 296;—*accidental, in general*, I. 300;—without ulceration owing to the presence of a ball in the lungs, I. 305;—suppurated tubercular, following adynamic fever, I. 315;—*scorbutic, in general*, I. 321;—tubercular complicated with scurvy, I. 327;—*accidental, in general*, its general indication, I. 333;—spontaneous or constitutional, I. 334;—in what it consists, *ibid*;—constitutional, with ulceration, case of, I. 335;—cases of constitutional, suppurating with various symptoms, I. 338;—dry tubercular, with hæmoptisis, I. 347;—do. with peritonitis, I. 352;—constitutional, without ulceration, I. 354;—apyrexia, I. 357;—*dry*, its character, compared with those of the most latent pleurisy, I. 359;—*pulmonary*, its general history, I. 361;—its organic alterations, I. 381;—its general treatment, I. 386;—dry, with lardaceous engorgement of the abdomen, II. 370.
- Plethora, does it occasion feebleness of the pulse?* I. 397.
- Pleurisy in general*, I. 153;—acute, become chronic, case of, I. 155;—chronic, complicated with pulmonary tubercles, and symptoms of aneurism of the heart, I. 158;—simple chronic, with a circumscribed purulent collection, I. 163;—double, I. 168;—chronic, with sanguineous effusion, I. 166;—chronic, complicated with intermittent fever, I. 172;—chronic, following a tertian intermittent, I. 176;—chronic, complicated with gastritis, following an intermittent fever, I. 179;—chronic, double, I. 181;—chronic, with an obscure development, I. 185;—chronic, latent, final gastritis, I. 186;—chronic, with pneumonic phthisis, I. 189;—chronic, with ulcer and perforation of the parenchyma, I. 191, 195, 197;—rheumatic, I. 172, 197;—chronic, following a sabre-wound, I. 202;—its general history, I. 205;—its organic alterations, I. 218;—its treatment, I. 224;—chronic, with gangrenous eschar and ulcer of the thoracic parietes cured, I. 232;—chronic, relieved, I. 236, 239;—degenerated into tubercular phthisis, (see *Tubercular Phthisis*;)—the most latent compared with dry phthisis, I. 359.
- Pleuro-peripneumony, tubercular*, I. 75, 256, 257.
- Polypi, ulcerations of*, I. 53.
- Pulse habitually frequent, what is to be concluded from it?* II. 53.
- Predisposition, see Cause and Temperament.*
- Progress and termination of chronic catarrh*, I. 126;—of pleurisy, I. 208;—of evident chronic pleurisy, I. 212;—of equivocal chronic pleurisy, I.

213;—of the most latent chronic pleurisy, I. 216;—of phthisis, I. 469;—of phlegmasia of the mucous membrane of the alimentary canal, II. 159;—of peritonitis, II. 356.

Pus, formation of, I. 35.

R.

Refrigerants, their use in phthisis, I. 399.

Regimen in catarrh, I. 132;—in chronic pleurisy, I. 227;—most suitable to aid antiphlogistics, I. 413;—in dry apyrexia phthisis, I. 436;—heating, case of gastritis, II. 20;—heating in warm climates, II. 135;—in gastritis and enteritis, see *Treatment*.

Resolution in general, I. 34.

Resorption of the fluid effused in pleurisy, I. 158.

Revulsives for pulmonary phlogosis in general, I. 406.

Rheumatism confounded with pleurisy, I. 195, 197.

Rubefacients, danger from their abuse, I. 406;—of their employment in pulmonary phlegmasia in general, I. 135.

S.

Scurvy, consecutive to intermittent fever, with general phlogosis, I. 107;—as a cause of phthisis, I. 321.

Secretions, how they modify gastritis, II. 149.

Sensibility, animal and organic, how they modify inflammation, I. 57;—of the viscera in intermittent fevers, II. 108;—of the stomach menancing gastritis, II. 191.

Seton, see *Exutories*.

Spleen, often affected in peritonitis, II. 321;—its sanguine congestions, and organic alteration, II. 281;—irritation results from that of alimentary canal, *ibid*;—inflammation of, *ibid*.

Squills, their use in suppurating phthisis, I. 441.

Stimulants, their employment as antiphlogistics, I. 403;—in phthisis, I. 428.

Stimulation, I. 56.

Sudorifics, their use in pulmonary phlogosis, I. 412.

Sulphur, its use in phthisis, I. 431.

Summary of the generalities of inflammation, I. 64;—of the history of chronic catarrhs and peripneumonies, I. 144;—of the history of chronic pleurisies, I. 242;—of phthisis

following chronic pleurisy, I. 293;—of the peculiar characters of constitutional phthisis, with ulceration, I. 338;—of dry constitutional phthisis, I. 359;—of the history of lymphatic inflammations of the lungs, I. 468;—of the history of inflammations of the mucous membrane of the digestive passages, II. 273;—of peritonitis, II. 389.

Suppression of expectoration in phthisis, I. 441.

Susceptibility, general, means of diminishing it, I. 131;—cause of the accessory symptoms in phthisis, I. 343.

Sweats, colliquative, in phthisis, their treatment, I. 446.

Sympathies of the digestive canal when phlogosed, II. 148.

Symptomatic, abuse made of this expression, II. 156.

Symptoms accessory of phthisis, their mechanism, I. 341;—predominant of phthisis of the third degree, their treatment, I. 437;—gastric, with intermittent fever, may indicate phlogosis, II. 96;—gastric compared with gastritis, II. 231;—particular and characteristic of each species of phlegmasia, see *Development*.

T.

Temperament, most subject to inflammation in general, I. 56;—of negroes subject to tubercles, I. 285;—delicate subject to tubercles, I. 292;—most favourable to lymphatic inflammations of the lungs, I. 367;—determines the degree of fever to which each individual is susceptible, II. 39;—its influence on the progress of dysentery, II. 66;—most favourable to gastric phlogosis, II. 136;—to dysentery in particular, II. 143;—to tubercles of the peritoneum, II. 372.

Termination, see *Progress*.

Thirst produced by gastritis, II. 48.

Topical applications, their employment in catarrh, I. 134;—emollient, their application in phlogosis of the lungs, I. 135;—in gastritis, II. 183;—in peritonitis, II. 375.

Trachea, chronic irritation of, from foreign bodies, I. 147;—cases of, I. 147, 149.

Treatment of intermittent fevers with catarrh, particular cautions required, I. 102;—of catarrh and peripneumo-

ny, I. 127;—of acute catarrh, I. 128;—of chronic catarrh, I. 130;—of acute pleurisy, I. 224;—of chronic pleurisy, I. 227;—of inflammations of the lungs in general, I. 336;—of spontaneous hæmoptysis, I. 408;—of pneumonic phthisis, I. 417;—of catarrhal phthisis, I. 418;—of pleuritic phthisis, *ibid*;—of phthisis depending upon the occupation, *ibid*;—of phthisis resulting from continued fevers, I. 419;—of scorbutic phthisis, I. 422;—of pulmonary irritation caused by the suppression of cutaneous affections, hæmorrhages, &c. I. 424;—of constitutional phthisis, I. 426;—of lymphatic engorgements of the lungs, I. 428;—of the predominating symptoms during the last stage of phthisis, I. 437;—successful of chronic inflammatory affections of the chest, I. 450;—of phlogoses of the mucous membrane of the alimentary canal, II. 174;—of gastritis, II. 178;—of acute gastritis, II. 184;—of chronic gastritis, II. 221;—of hæmorrhages, II. 216;—of latent gastritis, II. 231;—of gastro-enteric phlogoses complicated with intermittent fever, II. 239;—of enteritis, II. 244;—of chronic enteritis, II. 251;—of peritonitis, II. 373;—of chronic peritonitis, II. 382.

Tubercles, mechanism of their formation in the glands, I. 43;—may occur in all parts, *ibid*;—case in which a single one was found in the lungs, I. 105;—numerous with pleurisy, I. 157;—with aneurism of the heart, I. 161;—considered as an organic disorder in pleurisy in general, I. 218;—do they exist in all cases of phthisis? I. 248;—readily occur in negroes, I. 285;—readily occur in whites with delicate chests, I. 292;

—of the lungs, means of dissipating them, I. 428;—in peritonitis, II. 345.

U.

Udine, topography of, II. 94.

Ulcerations in general, I. 47;—of the cellular tissue, *ibid*;—of the parenchymata, I. 49;—of the muscular, tendinous, and ligamentous tissues, *ibid*;—of the membranes, I. 50;—chancrous, I. 51;—eroding, I. 52;—of polyp, I. 53;—scirrhus, *ibid*;—lymphatic fasciculi and secretory glands, *ibid*;—of lardaceous masses, I. 54;—summary, *ibid*;—of the lungs without tubercles, is it common? I. 307;—symptoms of this last, I. 308;—of a lardaceous omentum, II. 363.

Uneasiness, produced by gastritis and enteritis, its cause and effects, II. 84.

V.

Varicoro-aneurismatic diathesis, I. 91, 111.

Vegetables, fresh, their use in scorbutic phthisis, I. 422.

Vermifuges in gastritis and enteritis, II. 195.

Vesicatories, their effect in pleurisy, I. 255;—their use in pulmonary phlegmasia, I. 403, 446;—in irritations of the stomach, II. 181;—in peritonitis, II. 337.

Vulneraries, their use in suppurating phthisis, I. 443.

W.

White decoction, mode of making it, I. 266.

Worms, lumbrici often the effect of phlegmasia of the gastro-intestinal mucous membrane, II. 78;—in gastritis, II. 194;—in dysentery, II. 269.



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